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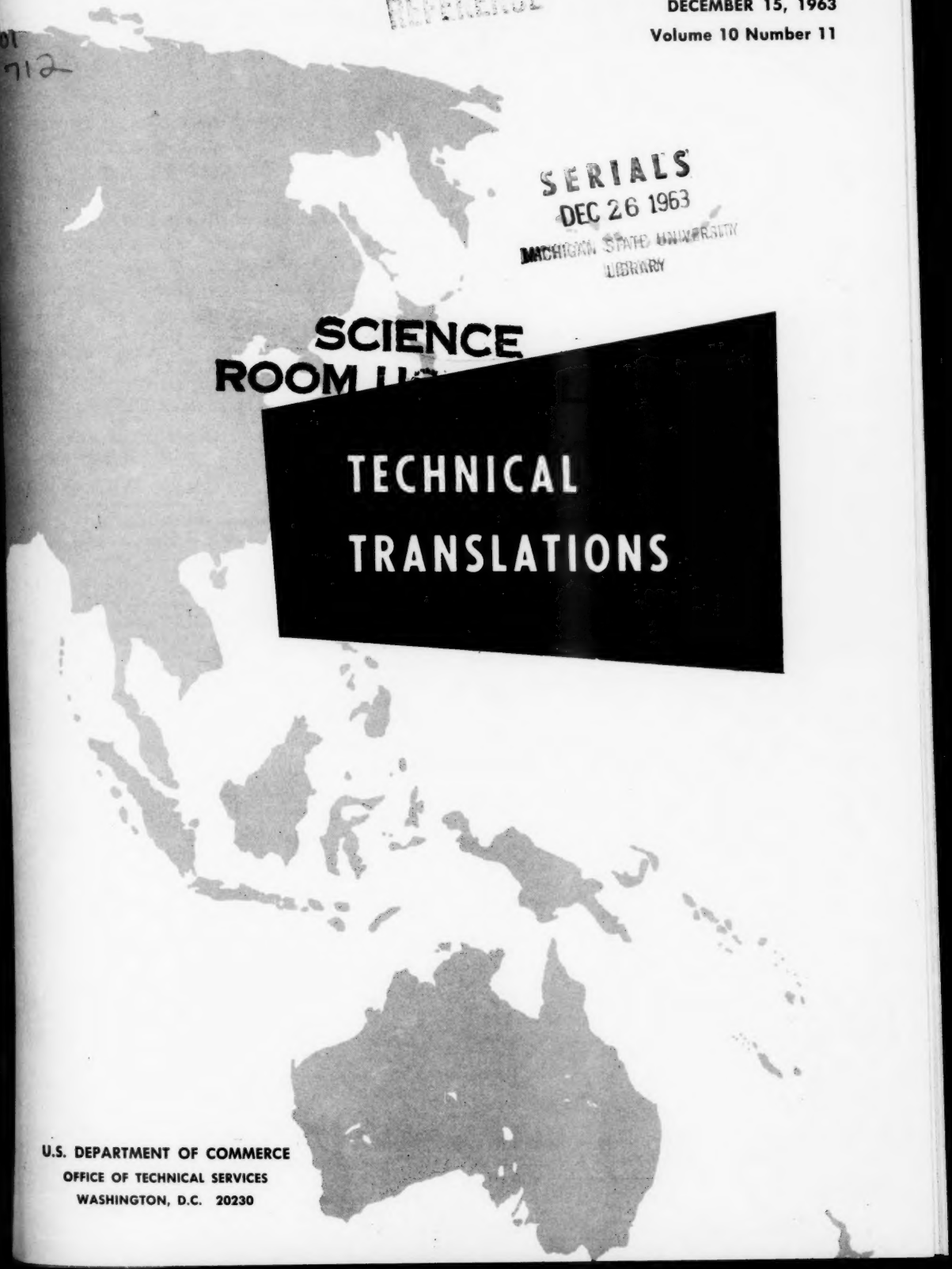

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON, D.C. 20230

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
Donald A. Schon, *Director*

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WASHINGTON, D.C. 20230

TECHNICAL TRANSLATIONS

Volume 10, Number 11 Pages 1313 - 1484 December 15, 1963

*Descriptors marked with an asterisk are listed in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 283 (GENERAL SERIES). 4 Sep 63, 15p. JPRS: 20913.
Order from OTS $0.50 63-31670

Abstracts trans. of Ceskoslovenska Akademie Ved. Vestnik, 1963, v. 72, no. 3, p. 297-391, 393-414.

DESCRIPTORS: *Abstracts, Bibliographies, *Scientific organizations, *Conferences, *History, Geology, Awards, Education, Masers, Documentation, Literature

NLL TRANSLATIONS BULLETIN, 1963, VOL. 5, NO. 10, P. 879-980. Oct 63, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes books received from the USSR, translations available for purchase or on loan from National Lending Library for Science and Technology or elsewhere and trans. from Pravda [Moscow] (USSR) 1963, 17 May; Ak[ademiya] Nauk SSSR. Vestnik, 1963 [v. 33] no. 5, p. 34-39; Ekonomicheskaya Gazeta (USSR) 1963, no. 23[96] p. 11; Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1963 [v. 17] no. 1, p. 40-42; Poligraficheskoe Proizvodstvo (USSR) 1963, no. 1, p. 10-13.

DESCRIPTORS: *Translations, Reports, *Bibliographies, *Scientific research, *Synthesis (Chemistry), Petroleum, *Electromagnetic pumps, *Geophysical prospecting

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 293 (GENERAL SERIES). 12 Sep 63, 20p. JPRS: 21046.
Order from OTS $0.75 63-31744

Consists of abstracts of articles from the scientific and technical journals of East Germany and Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Mathematics, *Optics, *Plasma physics, *Magnetism, Chemistry, Paleontology, *Solid state physics, *Ferromagnetism, Spectroscopy, Plastics, Radiobiology, Computers, Psychology, *Plants (Botany), *Insects

Contents:
A new step in scientific work, by M. V. Keldysh
New methods of inorganic synthesis, by V. I. Mikheeva
Effective geological prospecting: Its importance in the search for oil and gas, by A. Yamnov
The use of electromagnetic pumps in the foundry, by L. A. Verte
The most important trends in scientific research work in the VNIIPPa in 1963, by V. S. Lapatukhin

AGRICULTURE

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 90. 10 Oct 63, 15p JPRS: 21392.
Order from OTS $0.50 63-31909

Trans. of Nauchno-Mekhanicheskie Obshchestva SSSR, 1963, no. 7, p. 27; and from Ekonomicheskaya Gazeta (USSR) 1963 [no. 31(104)] p. 34; [no. 32(105)] p. 13, 45; [no. 34(107)] p. 13, 30, 44; [no. 35(108)] p. 8.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Design, Plants (Botany), Soils, Bulldozers, Economics, Industrial equipment, Scientific research, Vehicle accessories, Fertilizers, Driers (Apparatus).

Contents:
Excessive duplication of various agricultural machine models in the USSR
New plowing unit for feed crops
KUN-10 universal sweep rake
Difficulties between Krasnoyarsk and Birobidzhan plants re parts price increase
Idle machines at the Krasnyi Aksai plant
Financial difficulties of the scientific research institutes, by I. Ivanchenko and Yu. Kovtum
Useless footboards and railings on cultivators, by K. Podkatilov
New PASSh-2.8 ammoniac herbicide machine, MPS-5.0 flax thresher, LMN-1 tractor mounted flax gatherer-thresher and universal fruit stone removing machine
Reduced production of the 2LST-400 dryers, by A. Kleban.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 91. 11 Oct 63, 9p JPRS: 21413.
Order from OTS $0.50 63-31920

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 7, p. 49-50, 72-73; Bumazhnaya Promyshlennost' (USSR) 1963 [v. 38] no. 7, p. 12-13.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Cereals, Laboratories, Loaders, Trailers.

Contents:
KZK-3 self propelled universal grain harvesting combine, by B. I. Bochkarev and A. S. Bezin
Work experiences of the special agricultural machine building laboratory in the North-Caucasus economic region
Tests of new reed harvesting machines; ZhVT-1.8 reed windrower binder, PGN-0.3 tractor mounted grab loader, PTG-2.0 transport trailer, by A. F. Galkin.

Berlin, L. E.
EXPERIMENTAL APPARATUS FOR CONTINUOUS AMMONIZATION OF SUPER[PHOSPHATE] (Ispytanie Apparata dlya Nepreryvnoi Ammonizatsii Superfosfata). [1963] [19]p. (foreign text included).
Order from OTS or SLA $1.60 63-18139

Trans. of [Khimicheskaya Promyshlennost'] (USSR) 1941, v. 18, no. 4, p. 10-15.

DESCRIPTORS: *Phosphates, *Sulfates, *Calcium compounds, *Fertilizers, *Ammonia, *Industrial equipment.

Animal Husbandry

THE ETIOLOGY AND EPIDEMIOLOGY OF ANIMAL PARASITES. 18 Sep 63, 5p JPRS: 21134.
Order from OTS $0.50 63-31781

Trans. from Muncitorul Sanitar (Rumania) 1963 [v. 14] 10 Aug, p. 4.

DESCRIPTORS: Etiology, *Epidemiology, Animals, *Parasites.

IMPROVEMENT IN THE PREPARATION OF ANIMAL FEEDS. [1963] 2p
Order from OTS or SLA $1.10 63-18640

Trans. of French patent 1,076,533, 27 Oct 54.

DESCRIPTORS: *Feed pellets, Animals, Surface tension, Reduction, Preparation.

The object of the present invention is a new use of surface tension reducers in the preparation of animal feeds so that nutrient in the intestine will pass more easily through the wall because of better contact. Such surface active agents disperse the bile salts acting at the mouth of the duodenum.

Dunmire, R. P.
IMPROVEMENTS IN LABILE SUBSTANCES SUCH AS VITAMINS AND COMPLIMENTARY FEEDS. [1963] 28p. (figs. omitted).
Order from OTS or SLA $2.60 63-18631

Trans. of French patent 940,642, 31 May 48.

DESCRIPTORS: *Vitamins, Stability, Foods, Animals, Manufacturing methods, Decomposition, Inhibition.

Plant Cultivation

Burgevin, H.
OBSERVATIONS OF THE INFLUENCE OF GRANULATION ON THE EFFECTIVENESS OF NEWLY GRANULATED COMPLETE FERTILIZERS. [1963] 6p.
Order from SLA $1.10 63-18471

Trans. of Annales Agronomiques (France) 1943, v. 13, p. 8-11.

DESCRIPTORS: *Fertilizers, Plants (Botany), Agriculture, Soils, Pellets, Powders.

Chouard, Pierre.
REMARKS ON THE VOLATILITY OF ESTERS OF 2,4-D (Remarques sue la Volatilite des Esters du 2,4-D). [1962] [8]p. 7 refs.
Order from SLA $1.10 62-16637

Trans. of Acad[emie d'] Agr[iculture] de France. [Comptes Rendus des Seances] 1954, v. 40, 13 Jan, p. 40-48.

DESCRIPTORS: *Herbicides, *Acetic acids, Phenoxy radicals, Chlorides, *Esters, *Evaporation, Tests, Plants (Botany), Control.

For abstract see Chemical Abstracts 48: 6068, 1954.

Jung, J.
ON THE ACTION OF CROTONYLIDENE-DIUREA (CD-UREA) AS A NITROGEN FERTILIZER. [1963] 7p. 8 refs.
Order from SLA $1.10 63-16249

Trans. of Plant and Soil (Netherlands) 1961, v. 15, no. 4, p. 284-290.
Another trans. is available from SLA $1.10 as 63-10488 [1962] [5]p.

DESCRIPTORS: *Nitrogen compounds, *Fertilizers, Aldehydes, Chemical bonds, Soils, Ammonium radicals, Nitrates, Solubility, Urea.

For abstract see Technical Translations 10: 122, 1963

Krylatov, A. K.
SALT RESISTANCE OF GRAPE VINE (O Solevynoslivosti Vinogradnoi Lozy) tr. by V. A. Soloduhin. [1963] [16p] (foreign text included) 6refs [CSIRO] Trans. no. 6308.
Order from OTS or SLA $1.60 63-23991

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 2, p. 31-36.

DESCRIPTORS: *Vitaceae, *Salts, *Salinity, *Soils, Plants (Botany).

Laptev, Yu. P.
THE GEOGRAPHY OF CHINESE WHEAT (Geografiya Kitaiskoi Pshenitsy) tr. by Irene A. Donehoo. Aug 63, 4p WB/T-100.
Order from OTS $0.50 63-11700

Trans. of Priroda (USSR) 1963 [v. 52 no. 3, p. 102-103.

DESCRIPTORS: Geography, *Wheat, Distribution, China.

Loginov, L. I.
THE FEASIBILITY OF UTILIZING SEWAGE WATER CONTAINING NATURAL RADIOELEMENTS FOR THE IRRIGATION OF FIELDS. 30 Aug 63, 5p. 1 ref. JPRS: 20871.
Order from OTS $0.50 63-31657

Trans. of Gigiena i Sanitariya (USSR) 1963, v. 28, no. 6, p. 20-23.

DESCRIPTORS: *Sewage, *Natural radioactivity, *Irrigation systems, Water supplies, Radiological contamination, *Soils, Food.

The prolonged use of sewage waters containing natural radioactive elements results in an accumulation of these in the surface layer of irrigated fields. Under similar conditions, this also applies equally to fields where filtration is applied. The maximum accumulation of radioactive substances is observed during the winter, when the area of the irrigated fields is utilized as in the case of filtration fields, with continuous wetting and coating with a layer of ice. The accumulation in the soil of irrigated fields of radio-elements supplied by sewage waters later results in the migration of these substances and their accumulation in farm crops raised on these fields. There occurs, in this connection, a more intensive migration of uranium and, in considerably smaller amounts, radium. In view of the biological activity of uranium and radium, we can recommend the growing on irrigated fields of potatoes, cucumbers, and onions, and, of the grain corps, corn. (Author)

Markin, M. I.
VINEYARDS ON SANDY SOILS ARE HIGH-YIELDING (Vinogradniki na Peskakh Dayut Vysokie Urozhai) tr. by V. A. Soloduhin. [1963] [9p] (foreign text included) [CSIRO] Trans. no. 6311.
Order from OTS or SLA $1.10 63-23995

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 5, p. 30-33.

DESCRIPTORS: *Vitaceae, *Sand, *Soils, *Plants (Botany), Production, Growth.

Scharrer, K. and Schreiber, R.
POT EXPERIMENTS ON THE INFLUENCE OF INCREASED POTASSIUM AND MAGNESIUM FERTILIZATION ON THE PROTEIN YIELD OF FIELD BEANS (VICIA FABA) (Gefässversuche über den Einfluss Gesteigerter Kalium- und Magnesiumdüngung auf den Eiweissertrag der Ackerbohne (Vicia faba)). [1963] [26]p. (foreign text included).
Order from SLA $2.60 63-18121

Trans. of [Zeitschrift für Pflanzenernährung, Düngung, Bodenkunde] (Germany) 1943, v. 30, p. 360-370.

DESCRIPTORS: *Fabacea, *Potassium, *Magnesium, *Fertilizers, *Proteins, Statistical data.

Zhurbitskii, Z. I.
ON THE RESPONSIVENESS OF THE SUGAR BEET TO FERTILIZATION WITH CARBON DIOXIDE. Preliminary Communication. [1963] 30p. (figs. omitted) 29 refs.
Order from OTS or SLA $2.60 63-16078

Trans. of [Moskovskaya] Sel'skokhoz[yaistvennaya] Akad[emiya]. Izv[estiya] (USSR) 1928, no. 2, p. 427-444

DESCRIPTORS: *Beets, *Carbon dioxide, *Fertilizers, Soils, Plants (Botany)

For abstract see Chemical Abstracts 25: 4962, 1931.

ASTRONOMY

NEWS OF THE MAIN ASTRONOMICAL OBSERVATORY IN PULKOVO, 1962, VOL. 23, NO. 1(171): [SELECTED] TRANSLATIONS. 20 Aug 63, 209p. 128 refs.
Order from OTS $3.50 63-11677

Trans. of Glavnaya Astronomicheskaya Observatoriya, Pulkovo. Izvestiya (USSR) 1962, v. 23, no. 2(171) p. 3-30, 41-55, 77-106, 117-167.

DESCRIPTORS: *Astronomical observatories, *Astrophysics, Reports, Astronomy, *Optical instruments, Stars, Catalogs, Position finding, Planets, Sun, Refraction, Electronic relays, Photography.

Contents:
A catalogue of the right ascensions of 122 stars with declinations of from +70 to +90° obtained with the model of the L. A. Sukharev horizontal meridian instrument, by G. M. Timashkova

A catalogue of the right ascensions of 299 stars in the general list of the USSR time service obtai :d from observations during the IGY and IGC with the APM-10 transit instrument at the Kikolaev observatory, by N. S. Kalihevich

A study of the "night error" and "wind effect" in observations with the new PPI-1 transit instrument at Pulkovo, by Chin Chun-lan

An observational program of circumpolar stars for the determination of the orientation of the instrument in observations of the planets and the sun, by A. I. Plugina and V. N. Shishkina

On periodic variations of refraction, by B. A. Orlov

Preliminary results of determination of the diameter errors of the Toepfer meridian circle, by V. A. Varina and others

An investigation of the Freiberg-Kondratev transit instrument, by G. M. Petrov

Electronic relays in the time service of the Pulkovo observatory, by V. A. Vitnov

A study of five open star clusters by means of the proper motions and photometric characteristics of the stars, by V. V. Lavdovski

On the asymmetry of the figures of major planets, by H. I. Potter and B. N. Strugatski

A study of double and multiple stars in 115 Kaptein areas, by A. N. Deutsch

On making allowances for distortion in the determination of the photographic positions of heavenly bodies with a small number of reference stars, by A. A. Kiselev.

Dolgov, P. N.
THE INVESTIGATION OF PIVOTS AND FLEXURE OF THE TRANSIT INSTRUMENT. 3 May 63 [59]p.
JPRS: R-3037-D
Order from OTS or SLA $5.60 63-19546

Trans. of mono. Opredelenie Vremeni Passazhnym Instrumentom v Meridiane (The Determination of Time With the Transit Instrument in the Meridian) Moscow, 1962, chap. 15, p. 191-231.

DESCRIPTORS: *Instrumentation, Astronomy, Telescopes, Design

Topics include: Pivots with a perfect and imperfect figure; the classification of methods of investigation of pivots; general theory of the investigation of pivots; deduction of formulas for accounting for the influence of irregularities of pivots on the inclination and azimuth of the horizontal axis and on the collimation error of the tube; M. A. Smirnova's method; Challis method; the contact method; Erie's method; Pulkovo autocollimation method; program of the investigation of pivots; A. A. Ilinich method; some considerations and conclusions concerning the investigations of pivots; the lateral flexure of the transit instrument.

Uranova, T. A.
PROPER MOTIONS OF STARS OF TYPE T TAURI. [1963] 13p. (figs. tables omitted).
Order from OTS or SLA $1.60 63-14922

Trans. of Peremennye Zvezdy (USSR) 1951, v. 8, p. 192-201.

DESCRIPTORS: *Variable stars, Motion.

ACCELERATOR OF PARTICLES FOR THE DETERMINATION OF THE EFFECT OF METEORIC DUST ON COSMIC ROCKETS. [1963] [5]p.
Order from OTS or SLA $1.10 63-14702

Trans. of Akademiya Nauk SSSR. [Institut Nauchnoi Informatsii. Ekspress-Informatsiya: Seriya Raketnaya Tekhnika] 1959, no. 29, Aug, p. 85-87.

DESCRIPTORS: *Particle accelerators, *Meteorites, *Dusts, Laboratory equipment, Vacuum apparatus, Rockets, Test methods, Tests, Penetration

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 66. 30 Aug 63, 41p.
JPRS: 20886.
Order from OTS $16.00/year 61-11147-66
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanology, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 68. 2 Oct 63, 45p.
JPRS: 21318.
Order from OTS $16.00/year 61-11147-68
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Barashkova, E. P.
CERTAIN REGULARITIES IN THE REGIME OF TOTAL RADIATION (Nekotorye Zakonomernosti v Rezhime Summarnoi Radiatsii) tr. by Irene A. Donehoo. Jul 60, reprinted Aug 63 [22]p. 10 refs.
Order from OTS $0.75 63-11698

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1959, no. 80[142] p. 51-69.

DESCRIPTORS: *Solar radiation, *Sun, Albedo (Astronomy), Radiation measurement systems, Measurement, Meteorological data

Total radiation is the basic incoming portion of the radiation balance. The relationship between the intensity of total radiation and the altitude of the sun during a cloudless sky was investigated on the basis of observations at 39 points. In order to determine the amount of incoming radiation during the day, separate recordings of diffuse radiation for horizontal surface and direct radiation on perpendicular surface were made at certain stations. The monthly sums of total radiation were obtained by the addition of the daily sums. Tables and graphs are shown of the results.

Danilov, A. D.
MODEL OF VENUS AND MARS IONOSPHERES (Model' Ionosfery Venery i Marsa). [1963] 11p 18refs
Order from OTS or SLA $1.60 63-18717

Trans. of #Geomagnetizm i Aeronomiya (USSR) 1961, v. 1, no. 3, p. 314-319.

DESCRIPTORS: *Planetary atmospheres, *Atmosphere models, *Ionosphere, *Venus, *Mars, Carbon dioxide, Nitrogen, Ions, Electron density, Photochemistry.

On the basis of examination of photochemical reactions occurring in the terrestrial ionosphere, models of Venusian and Martian ionospheres were constructed. They showed that the atmosphere of Venus mainly consists of carbon dioxide, while that of Mars consists of molecular nitrogen. It was established that the ionosphere of Venus has CO_2^+, CO^+ and O^+ ions, with maximum electron concentration of the order of 10^6 electrons/cm^3 at an altitude of about 100 km. The Martian ionosphere has N^+_2 and N^+ ions, with maximum electron concentration of the order of 10^5 electrons/cm^3 at a height of about 300 km. (Author)

Gringauz, K. I., Bezrukikh, V. V., Ozerov, V. D., and Rybschinskii, R. E.
THE STUDY OF THE INTERPLANETARY IONIZED GAS, THE ENERGETIC ELECTRONS, AND THE CORPUSCULAR RADIATION OF THE SUN BY MEANS OF THREE-ELECTRODE TRAPS OF CHARGED PARTICLES ON THE SECOND SOVIET SPACE ROCKET [Izuchenie Mèzhplanetnogo Ionizovannogo Gaza, Energichnykh Electronov i Korpuskulyarnogo Izyucheniya Solntsa pri Pomoshchi Trielektrodnykh Lovushek Zaryazhennykh Chastits na Vtoroi Sovetskoi Komicheskoi Rakete]. [1963] [12p] 5refs
Order from OTS or SLA $1.60 63-18705

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1961, v. 6, p. 101-108.
Another trans. is available from STS $5.00 as STS Trans-1, 20 Dec 61, 7p.

DESCRIPTORS: *Space probes, *Scientific satellites, Solar atmosphere, *Interstellar matter, *Gases, Ionization, *Electrons, *Solar radiation, Charged particles, Radiation measurement systems, Design.

The tests with three-electrode traps of charged particles were made on the first, the second, and the third Soviet space rockets. The most statistically valuable materials for the considered tests (about 12,000 separate measurings of the collector currents) were obtained in the flight of the second space rocket. The data of this flight is presented. (Author)

Kalinyak, A. A.
DETERMINING THE WIDTH OF THE GREEN LINE OF THE CORONA OF 5303 Å WITH THE AID OF AN INTERFEROMETER DURING THE ECLIPSE OF 21 SEP 41. Soviet Expedition Report. [1963] 16p 4refs
Order from OTS or SLA $1.10 63-18160

Trans. of mono. Trudy Expeditii po Nablyudeniyu Polnøvo Solnechnovo Zatmeniya, Akademiya Nauk SSSR, 21 Sep 41, p. 352-363.

DESCRIPTORS: *Solar corona, *Solar eclipses, Line spectrum, *Solar spectrum, *Interferometers, Optical instruments, Optical properties, Spectrographic analysis.

Popova, T. V.
ON THE QUESTION OF THE STABILITY OF FILAMENTS IN GAS-DUST NEBULAE. [1963] 18p. 10 refs.
Order from OTS or SLA $1.60 63-14734

Trans. of #Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 5, p. 868-878.

DESCRIPTORS: *Nebulae, Stability, Models (Simulations), Cylindrical bodies, Compressive properties, Equations, Harmonic analysis, *Stars.

The problem on the gravitational instability of an infinite compressible cylinder with a free boundary relative to arbitrary surface type disturbances is considered. Equations of hydrodynamics in linear approximation are used for the solution. It is found that the stability of the cylinder is determined by the compression parameter $a = \sqrt{4\pi G p_0 R_0}/v_t$. Instability can set in only for values of a within the limits $0 \leqslant a \leqslant a^*$, where $a^* = 1.55265$. For each value of a within these limits there exists a maximal unstable harmonic. The values $a_0 = 0.7276$ and $z_0 = 0.702$ are found at which there is maximal instability of the surface type. The results obtained are applied for an estimate of the stability of filaments of gas-dust nebulae. (Author)

Shklovskii, I. S., Moroz, V. I., and Kurt, V. G.
THE NATURE OF THE EARTH'S THIRD RADIATION BELT (O Prirode Tret'ego Radiatsionnogo Poyasa Zemli). [1962] [12]p. (foreign text included) 10 refs.
Order from OTS or SLA $1.60 62-16100

Trans. of #Astronom[icheskii] Zhurnal (USSR) 1960, v. 37, no. 5, p. 931-934.

DESCRIPTORS: *Upper atmosphere, *Electron density, Solar radiation, Magnetism, Astrophysics.

On the basis of available experimental data it can be concluded that the third radiation belt is a formation which is characteristic of magnetically quieter periods

when solar activity is low. It can be expected that during periods of high solar activity, when relatively powerful corpuscular streams penetrate the earth's atmosphere (sic), the third belt (and the second as well) will be most highly deformed and its basic characteristics will undergo important changes. (Author)

BEHAVIORAL SCIENCES

MEMBERS OF THE COUNCIL FOR THE COORDINATION OF SCIENTIFIC RESEARCH. 26 Aug 63, 2p. JPRS: 20804.
Order from OTS $0.50 63-31621

Trans. of Privredni Pregled (Yugoslavia) 1963, v. 13, no. 2245, 13 June, p. 3.

DESCRIPTORS: *Personnel, *Scientific personnel, *Scientific organizations, Research program administration.

The names of the appointees and their affiliations are listed.

Egorov, A. G. and Shevchenko, A. P.
TRAINING OF ENGINEERING PERSONNEL FOR THE MEDICAL INDUSTRY. 4 Oct 63, 8p JPRS: 21337.
Order from OTS $0.50 63-31888

Trans. of Meditsinskaya Promyshlennost' SSSR, 1963, v. 17, no. 7, p. 3-8.

DESCRIPTORS: Training, *Engineering personnel, *Chemists, Chemical engineering, Drugs, *Pharmacology, Universities.

It is recommended that the training of chemical engineers and technologists for the production of medicinal substances be concentrated in one institution.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 273 (BIOLOGY AND MEDICINE SERIES). 21 Aug 63, 26p. JPRS: 20750.
Order from OTS $0.75 63-31591

Consists of abstracts of articles from the scientific and technical journals of Poland and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Aviation medicine, Blood, *Veterinary medicine, Poisoning, Silkworms, *Plants (Botany), Cells (Biology), Dyes, Electrophoresis, Intestines, Chemical analysis, Industrial medicine, Pharmacology, Plankton, Meat packing industry, Conferences.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 278 (BIOLOGY AND MEDICINE SERIES). 30 Aug 63, 26p. JPRS: 20849
Order from OTS $0.75 63-31641

Consists of abstracts of articles from the scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Neoplasms, Pregnancy, Surgery, Drugs, Poisoning, Neurology, Shock (Pathology), *Diseases, Cancer, Diagnosis, Skin, Eye, Fertility, Ulcers, Epidemiology, Biochemistry, Infants, Therapy, Pharmacology, Psychoses, Blood coagulation, Reproductive system, Trichomonas, Dental caries.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 280 (BIOLOGY AND MEDICINE SERIES). 30 Aug 63, 32p. JPRS: 20882.
Order from OTS $1.00 63-31662

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia.

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ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 282 (BIOLOGY AND MEDICINE SERIES). 3 Sep 63, 30p. JPRS: 20895
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ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 309 (BIOLOGY AND MEDICINE SERIES). 3 Oct 63, 30p JPRS: 21302.
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ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 312 (BIOLOGY AND MEDICINE SERIES). 4 Oct 63, 36p JPRS: 21321.
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ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 317 (BIOLOGY AND MEDICINE SERIES). 10 Oct 63, 13p
JPRS: 21403.
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Consists of abstracts of articles from selected scientific and technical journals of Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 321 (BIOLOGY AND MEDICINE SERIES). 11 Oct 63, 37p JPRS: 21423.
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DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Veterinary medicine, Milk, Meat, Poisoning, Genetics, *Diseases, *Reproduction (Physiology), Children, Age, Surgery, Prosthetics, Hematology, Fertility.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 322 (BIOLOGY AND MEDICINE SERIES). 14 Oct 63, 11p
JPRS: 21445.
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Consists of abstracts of articles from the scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Radiobiology, Radiation effects, Radiotherapy, Neurology, Feeding, *Diseases, Hormones, Children, Surgery, Hospitals.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 88 (BIOCHEMISTRY AND BIOLOGY SERIES). 11 Sep 63, 16p.
JPRS: 21033.
Order from OTS $0.50 63-31734

Trans. of selected abstracts from Referativnyi Zhurnal. Biologiya (USSR) 1962, no. 23; Referativnyi Zhurnal. [Khimiya]. Biologicheskaya Khimiya (USSR) 1962, nos. 20, 23.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Biochemistry, *Plants (Botany), Animals, Medicine, Viruses, Microorganisms, Forestry, *Trees, Physiology, Cancer, Tumors, Soils, Reflexes, Biosynthesis.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 90 (BIOLOGY SERIES). 26 Sep 63, 30p JPRS: 21221.
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Trans. of selected abstracts from Referativnyi Zhurnal. Farmakologiya, Toksikologiya (USSR) 1963, nos. 2, 4, 6, 9; Referativnyi Zhurnal. Lesovedenie i Lesovodstvo (USSR) 1963, nos. 1-2; Referativnyi Zhurnal. Obshchie Voprosy Patologii, Onkologii (USSR) 1963, no. 2; Referativnyi Zhurnal. Pochvovedenie (USSR) 1963, nos. 4, 8; Referativnyi Zhurnal. Rastenievodstvo (USSR) 1963, nos. 1-3, 7; Referativnyi Zhurnal. Zhivotnovodstvo Veterinariya (USSR) 1963, no. 7.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, China, Pharmacology, Poisoning, Chemotherapeutic agents, *Forestry, Tumors, Soils, *Plants (Botany), Veterinary medicine, *Fertilizers, Tranquilizers.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 92 (BIOCHEMISTRY, BIOLOGY AND PLANT GROWING SERIES). 30 Sep 63, 26p JPRS: 21252.
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Trans. of selected abstracts from Referativnyi Zhurnal [Khimiya]. Biologicheskaya Khimiya (USSR) 1963, no. 1; Referativnyi Zhurnal. Biologiya (USSR) 1963, nos. 7 and 10; Referativnyi Zhurnal. Rastenievodstvo (USSR) 1963, nos. 4-5.

DESCRIPTORS: *Abstracts, *Biochemistry, *Biology, *Plants (Botany), Bibliographies, *Drugs, Toxicity, Animals, Viruses, Physiology, Anatomy, Biophysics, Cytology, Agriculture, Genetics.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 95 (BIOCHEMISTRY SERIES). 1 Oct 63, 2p JPRS: 21264.
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Trans. of selected abstracts from Referativnyi Zhurnal. [Khimiya]. Biologicheskaya Khimiya (USSR) 1962, no. 12 and Referativnyi Zhurnal. Khimiya i Tekhnologiya Pishchevnykh Produktov (USSR) 1963, no. 8.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Biochemistry, Chemistry, China, Immunity, Food.

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY: [SELECTED] TRANSLATIONS NO. 52. 30 Sep 63, 12p JPRS: 21255.
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Trans. of Chung Kuo Nung Yeh K'o Hsüeh (Chinese People's Republic) 1963, no. 2, p. 26-30; and from K'o Hsüeh T'ung Pao (Chinese People's Republic) 1963 [no. 4] p. 7.

DESCRIPTORS: *Scientific research, *China, *Rusts (Microorganisms), Wheat, Insecticides, *Birds, Economics.

Contents:
A discussion of the problems in research work for the prevention and treatment of wheat rust disease, by Wang Huan-ju
China's economic fauna-Avifauna, by Hsieh Chung-p'ing book review by Cheng Tso-hsin, Peiping

DECREE THE FURTHER DEVELOPMENT OF BIOLOGY PRACTICE. 3 Oct 63, 13p JPRS: 21314.
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Trans. of Voprosy Meditsinskoi Khimii (USSR) 1963, v. 9, no. 3, p. 227-232.

DESCRIPTORS: Biology, *Metabolism, Diseases, *Biochemistry, Scientific research.

A summary of the decree of the Central Committee of the CPSU and of the Council of Ministers USSR entitled "On Measures for the Further Development of Biological Science and its Close Ties with Practice" which was published on 25 January 1962.

FEDERATION PROCEEDINGS TRANSLATION SUPPLEMENT, VOL. 22, NO. 3, PT. II, P. T387-T592. May-June 63, 1v.
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Trans. of #Antibiotiki (USSR) 1962, v. 7, no. 1, p. 32-[35]; Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 2, p. 484-[487]; Arkhiv, Anatomii, Gistologii i Embriologii (USSR) 1962, v. 42, no. 2, p. 12ff; Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962, v. 27, no. 3, p. ##430-[441] ##455-[460]; Arkhiv Patologii (USSR) 1962, v. 24, no. 1, ##p. 63-[69]; no. 2, p. 19-[27] 33-[37]; no. 3, p. 13-[20] 27-[33] 44-[52]; no. 5, p. 7-[13] 63-[68]; no. 7, p. 60-[62]; no. 8, p. 56-[65]; #Byulleten Eksperimental'noi Biologii i Meditsiny (USSR) 1962, v. 53, no. 2, p. 97-[101]; #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 5, p. 510-[519] 540-[553] 579-[586] 598ff; no. 9, p. 1017ff, 1026ff, 1042ff, 1064ff, 1085ff; Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 7, p. 15-[21]; no. 8, p. 107; Laboratornoe Delo (USSR) 1962, v. 8, no. 7, p. 3-[8] 19-[21] 47ff; no. 8, p. 31-[34]; Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 7, p. 45-[50]; Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii (USSR) 1962, v. [37]67, no. 4, p. 109ff; Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 7, p. 40-[44]; Tsitologiya (USSR) 1962, v. 4, no. 3, p. 251ff, 290ff, 306ff, 318-[322] 339-[346]; Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 1, p. 47ff; no. 3, p. 306-[314].
##Other translations are available from OTS or SLA

DESCRIPTORS: *Biology, *Medicine, *Physiology, *Pathology, Analyzers (Psychology), Color vision, *Nerve cells, *Oxidoreductases, *Diaphragm, *Conditioned reflex, *Bioelectronics, Electroencephalography, *Reflexes, Muscles, *Autonomic nervous system, *Chlorpromazine, *Neuromuscular transmission, Motor reactions, *Blood circulation, Heart, *Anomalies, Fluorescence, Microscopy, *Atherosclerosis, Aorta, Lipids, *Plastic surgery, Blood vessels, Erythrocytes, *Anemias, *Thrombosis, *Embolism, Blood platelets, *Hemopoietic system, *Radiation effects, *Pneumonia, Radiation sickness, Urine, *Diagnostic agents, *Mucopolysaccharides, Tobacco, Smokes, *Silicosis, Quartz, *Paramecium, *Influenza viruses, *Allergy, *Amoeba, *Amyloidosis, Pancreas, *Pepsins, *Vitamin B complex, *Electrophoresis, Gametes, Regeneration, *Bone, Metabolism, Thrombin, *Phosphorus transferases, Tissue cultures, *Leukemia, Nucleic acids, *Neoplasms, Cancer, Adaptation (Physiology), Oxygen consumption

Contents:
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problem of color vision, by E. G. Shkol'nik-Yarros
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Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 42, no. 3, p. 30-[43] 103-[107]; no. 5, p. 14ff; v. 43, no. 8, p. 11ff, 29-[34] 43ff; no. 12, p. 50ff; Arkhiv Patologii (USSR) 1962, v. 24, no. 6, p. 29-[35]; Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962 [v. 27] no. 1, p. 70-[83]; Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 11, p. 51ff; #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 5, p. 534-[539] 563-[570]; no. 9, p. 1113ff; no. 11, p. 1301ff, 1350ff, 1359ff; no. 12, p. 1444ff, 1454ff, 1479ff, 1498ff; Kardiologiya (USSR) 1962, v. 2, no. 2, p. 44-[52]; Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 8, p. 65ff; no. 11, p. 79ff; Laboratornoe Delo (USSR) 1962, v. 8, no. 7, p. 26-[29] 39ff; Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 3, p. 35-[39] 53-[58]; no. 4, p. 66-[70]; no. 7, p. 50-[57] ##68-[71]; no. 8, p. 74ff; Problemy Endokrinologii i Gormonoterapii (USSR) 1963, v. 9, no. 1, p. 44ff; Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 11, p. 41-[45] 68-[72] 96-[100]; Tsitologiya (USSR) 1962, v. 4, no. 3, p. 359-[360]; Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 1, p. 35ff; no. 4, p. 389ff; no. 6, p. 638ff; Voprosy Pitaniya (USSR) 1962, v. 21, no. 3, p. 56-[61]; no. 6, p. 49ff; #Zhurnal Mikrobiologii i Epidemiologii i Immunobiologii (USSR) 1962 [v. 33] no. 1, p. 35-[40]; no. 2, p. 20-[25] 52-[55] 116-[119].
##Another trans. is available from OTS or SLA $4.60 in 62-33314, JPRS-15514, 1 Oct 62 [45p].

DESCRIPTORS: *Biology, Cytochemistry, *Cholinesterase, Riboflavin, *Vitamin B complex, *Tuberculosis, Manganese, Oxidoreductases, Drugs, Insulin, *Chlorpropamide, *Pancreas, *Thyroid and antithyroid agents, Immunity, *Desoxyribonuelic acids, *Antigen-antibody reactions, *Rheumatic diseases, *Antitubercular agents, Brucella, *Rickettsia, *Tetanus toxoid, *Smallpox, *Leukocytes, *Diaphragm, Chemoreceptors, *Peptic ulcers, *Deficiency diseases, Kidneys, *Transplantation, Embryos, Blood circulation, Liver, *Radiation effects, *Radiotherapy, *Hemopoietic system, *Pregnancy, Diet, Infections, *Electroencephalography, *Cerebral cortex, Nerves, Nuclei (Biology), *Neuromuscular transmission, Vision, Spinal cord, Ganglia, *Autonomic nervous system, *Sensory mechanisms, *Motor reactions, Heart, *Carotid sinus, *Exercise, *Mitral stenosis, China, *Hypertension, Blood chemistry

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JOURNAL OF THE ALL-UNION CHEMICAL SOCIETY IM. D. I. MENDELEEV, 1963, VOL. 8, NO. 1: ARTICLES ON PROTEIN SYNTHESIS, RNA, AND GENETICS. 12 Sep 63, 198p. 702 refs. JPRS: 21050. Order from OTS $3.50 63-31747

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1963, v. 8, no. 1, p. 2-94.

DESCRIPTORS: *Biochemical genetics, Genetics, Proteins, *Ribonucleic acids, Biosynthesis, *Chromosomes, *Mutations, Microorganisms, *Viruses, *Bacteriophages, *Radiation effects, *Enzymes, Cells (Biology), Nuclei (Biology).

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The code of protein synthesis, by A. A. Baev
Transfer (soluble) ribonucleic acids, by L. L. Kiselev
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LIFE SUPPORT SYSTEMS. A. BIOSCIENCES: SOVIET LITERATURE. Rept. no. 15 on AID Work Assignment no. 22. 3 July 63 [20]p. 8 refs. AID Rept. P-63-91.
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DESCRIPTORS: *Life support, *Space biology, *Space medicine, *Physiology, Closed-cycle ecological systems, Literature, Radiation sickness, Statistical data.

Contents:
Space medicine and biology
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RECENT SCIENTIFIC AND MEDICAL ACTIVITIES IN THE SOVIET UNION. 3 Oct 63, 87p JPRS: 21305.
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Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 4, p. 10-12; Nauchno-Tekhnicheskie Obshchestva SSSR, 1963 [v. 5] no. 1, p. 2-4; Sovetskoe Zdravookhranenie (USSR) 1962 [v. 21] no. 11, p. 30-36; Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1963 [v. 7] no. 5, p. 3 (excerpt); ##Voprosy Pitaniya (USSR) 1963 [v. 22] no. 3, p. 90-93; Zdravookhranenie Belorussi (USSR) 1963 [v. 9] no. 4, p. 86-90; and 2 selected articles from Mar-Apr 63 issues of 2 Russian newspapers.
##Another trans. is available from OTS $1.00 in 63-31358, JPRS-20001, 23 Jul 63, 33p.

DESCRIPTORS: *Medicine, *Agriculture, *Chemistry, Biology, Scientific research, *Scientific organizations, *Medical research, *Industrial medicine, *Public health, *Pesticides, Toxicity, *Labor unions.

Contents:
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Practical results of 1962 research by the Academy of Sciences Tadzhik SSR, by S. Umarov
Recent achievements of the Academy of Sciences Estonian SSR
Practical contributions of Scientific-Technical Societies, by N. N. Gritsenko
Ways of coordinating scientific research in medicine, by I. A. Kryachko
Chronicle of labor hygiene developments
##All-Union Conference on the Hygiene and Toxicology of Pesticides (no. 2) by S. G. Serebryanaya
Plenum of the Belorussian Republic Committee of the Medical Workers Trade Union, by M. Piletskii
The Belorussian Scientific Society of Hygienists in 1962, by M. Livshits.

SOVIET BIOASTRONAUTICS AND BIOTECHNOLOGY FACILITIES, PROGRAMS, PERSONALITIES: SUMMARY OF DATA. Report on AID Work Assignment no. 22. 9 July 63 [55]p. 211 refs.
AID Rept. P-63-95.
Order from OTS or SLA $5.60 63-23590

DESCRIPTORS: *Space flight, *Closed-cycle ecological systems, *Telemeter systems, *Training, *Exobiology, *Astronauts, Space medicine, Space biology, Microorganisms, Histology, *Radiation effects, Algae, Radioprotective agents, Space environmental conditions, *Bibliographies.

Contents:
Introduction
Spaceflight experiments
Space-oriented research
Closed ecological systems
Biotelemetry
Selection and training
Exobiology
Soviet bioastronautic personnel affiliated with specific institutes: list.

USSR SCIENTIFIC ABSTRACTS: BIOLOGY AND MEDICINE NO. 3. 14 Aug 63, 102p. JPRS: 20645.
Order from OTS $2.50 63-31533

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Marine biology, *Fishes, *Microorganisms, *Space medicine, *Cardiovascular system, *Epidemiology, *Age, *Radiobiology, *Cancer, *Pharmacology *Physiology, *Public health, *Therapy, *Drugs, Medical equipment.

Contents:
I. Biology
  Marine biology
  Microbiology
  Ornithology
II. Medicine
  Aerospace medicine
  Cardiovascular diseases
  Epidemiology
  Geriatrics
  Nuclear medicine

Oncology
Pharmacology and toxicology
Physiology
Public health
Therapy
Aid to underdeveloped countries.

USSR SCIENTIFIC ABSTRACTS: BIOLOGY AND MEDICINE NO. 4. 10 Sep 63, 71p. JPRS: 20991.
Order from OTS $2.00 63-31712

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Histology, *Fishes, *Microorganisms, *Radiobiology, *Space medicine, *Cordiovascular system, Diseases, *Epidemiology, *Immunology, *Medical equipment, *Cancer, *Pharmacology, *Physiology, *Public health

Contents:
I. Biology
Histology
Ichthyology
Microbiology
Radiobiology
II. Medicine
Aerospace medicine
Cardiovascular diseases
Epidemiology
Immunology
Medical and biological instruments
Oncology
Pharmacology and toxicology
Physiology
Public health
Miscellaneous

Bogorov, V. G.
BIOLOGY OF THE WHITE SEA, ED. BY L. A. ZENKEVICH: WORKS OF THE WHITE SEA BIOLOGICAL STATION, MOSCOW U., 1962, VOL. 1 (REVIEW). 30 Aug 63, 2p. JPRS: 20878.
Order from OTS $0.50 63-31661

Trans. of Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 6, p. 967.

DESCRIPTORS: *Marine biology, White Sea.

Kvitko, K. V., Zakharov, I. A. and others.
ULTRAVIOLET-INDUCED AND SPONTANEOUS MUTATIONS IN CHLORELIA VULGARIS BEIJER [AND] ISOLATING AUXOTROPHIC MUTANTS OF CHLORELIA BY A REPLICA PLATING TECHNIQUE. 13 Aug 63, 12p. 25 refs. JPRS: 20609.
Order from OTS $0.50 63-31511

Trans. of Leningrad U. Vestnik (USSR) 1963 [v. 18] no. 9 [Seriya Biologii] no. 2, p. 150-156, 159-160.

DESCRIPTORS: *Ultraviolet radiation, *Mutations, *Radiation effects, *Algae, Genetics, Culture media, Nutrition, Photosynthesis, Plants (Botany).

Makarov, P. V.
QUANTITATIVE STUDY OF FROG OOCYTES IN CONNECTION WITH SOME MORPHOLOGIC AND CYTOCHEMICAL PROBLEMS. 9 Sep 63, 13p. 16 refs. JPRS: 20980.
Order from OTS $0.50 63-31706

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1963, v. 44, no. 6, p. 21-29.

DESCRIPTORS: *Amphibians, *Gametes, Eggs, Morphology, *Cytochemistry, Cells (Biology), Nucleic acids, *Biochemical genetics, Mitosis.

Measurements were taken of oocytes and their nuclei in frogs of various ages and at various times of the year; microcolorimetric determination of their protein content was also made. During the period of protoplasmic growth the oocyte volume increases 10-30 thousand times, and the nuclear volume -- 3 - 12 thousand times. During trophoplasmic growth the volume of oocytes increases 30 times, and of the nuclei -- three to four times. Prior to ovulation the volume of the nuclei represents about half the volume of cytoplasm proper (considered equal the volume of cytoplasm at the start of yolk-formation). The protein content in the nucleoplasm is four to eight times greater than in the cytoplasm proper. During the transition of oocytes to the maturation stage, as the result of nuclear dissolution, the ooplasm is inundated with a large quantity of nuclear acid proteins. Myxoplasm is formed in which up to two-thirds of the proteins are of nuclear origin. This circumstance must be borne in mind in the interpretation of the nature of a mature and fertilized ovum, as well as blastomeres; it must be taken into consideration in the study of problems of heredity. The oocytes that have an average volume do not grow during the winter, which is in agreement with the autoradiographic data. (Author)

Markova, D. A. and Zlotkina, E. I., editors.
STUDIES OF THE CEREBRAL CORTEX. 2 Aug 63, 27p. 29 refs. JPRS: 20487.
Order from OTS $0.75 63-31446

Trans. of mono. Problemy Sosudistoi Neirokhirurgii (Problems of Vascular Neuro-Surgery) Minsk, 1962, p. 202-213, 235-243, 277-278.

DESCRIPTORS: *Cerebral cortex, *Hypertension, Electroencephalography, *Tumors, *Brain, Surgery, *Motor reactions, *Adaptation (Physiology).

Contents:
On the problem of the functional condition of the cerebral cortex in patients suffering from hypertension on the basis of data on rhythm assimilated in an electroencephalogram, by S. E. Ginzburg
On the compensation of the motor functions after the removal of cerebral tumors, by V. I. Savich
Table of contents.

Mashanskii, V. F.
STRUCTURE OF THE MITOCHONDRIA: SHORT REPORTS. [1963] [13]p. 31 refs. FASEB manuscript no. S168-3.
Order from OTS or SLA $1.60 63-23864

Trans. of Tsitologiya (USSR) 1962, v. 4, no. 5, p. 555-558.

DESCRIPTORS: Histology, Morphology, *Cells (Biology), *Microsomes, *Electron microscopy.

Based on a discussion of the data from the literature and original observations of the ultrafine organization of various unicellular and multicellular organisms, it is concluded that the character and dimensions of the paired mitochondrial membranes do not support Sjöstrand's views that the interval between them is occupied by a bilipid layer. Each of the membranes forming the mitochondrial structures is formed by two osmiophilic layers, 20 Å thick, separated by a translucent interval about 25 A thick. These membranes are compared with the lipoprotein complexes described for cytoplasmic membranes. A new scheme of the structure of mitochondrial membranes is suggested. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
PARASITOLOGY, PARASITES, AND PARASITIC INFECTIONS (ANIMAL, INCLUDING HUMAN). Jul 63, 28p 320refs OTS Selective Bibliography SB-495, suppl. 1
Order from OTS $0.10 OTS SB-495, Suppl. 1

DESCRIPTORS: *Parasites, *Parasitic infections, *Bibliographies, Animals, Man, Veterinary medicine.

Lists 320 domestic and foreign references on parasitology, parasites, and parasitic infections added to the OTS collection from May 1962 through July 1963. Includes reports on parasitology and parasites (general); helminths (general, and specific; trematodes, cestodes, nematodes; arthropods (ticks, mites, diptera, lice, fleas, flies, etc.); protozoa (plasmodium, leishmania, trypanosoma, coccidia, toxoplasma, piroplasma, etc.); parasitic infections (general, and specific; echinochasmosis, elephantiasis, filariasis, leishmaniasis, malaria, paragonimiasis, piroplasmosis, Q-fever, schistosomiasis, spirochetosis (including leptospirosis), tick-borne encephalitis, toxoplasmosis tularemia, etc.). (Author)

Sysoev, V. V.
A CONTRIBUTION TO TECHNIQUES FOR INVESTIGATING CARDIAC EXCITABILITY. 19 Sep 63, 6p 4refs JPRS: 21145.
Order from OTS $0.50 63-31790

Trans. of #Fiziologicheskii Zhurnal SSSR, 1963, v. 49, no. 6, p. 770-773.

DESCRIPTORS: *Medical equipment, Bioelectronics, *Heart, Stimulation, Electrocardiography, *Measuring devices (Electrical and electronics).

Sisakyan, N. M., Volinkin, Yu. M., and Saksonov, P. P.
AN IMPORTANT STAGE IN THE DEVELOPMENT OF BIOLOGICAL SCIENCE [AND] MEDICAL AND BIOLOGICAL RESEARCH ON THE FACTORS IN SPACE FLIGHT. 6 Sep 63, 31p. 26 refs. JPRS: 20943.
Order from OTS $0.75 63-31684

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963 [v. 28] no. 3, p. 337-347, 405-418.

DESCRIPTORS: *Biology, *Space biology, *Space medicine, Space flight, *Space environmental conditions, Solar radiation, Radioprotective agents, Pharmacology, Agriculture

Troshin, A. S. and Barenboim, G. M.
LUMINESCENCE METHODS IN CYTOLOGY. 8 Oct 63, 7p JPRS: 21357.
Order from OTS $0.50 63-31897

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 6, p. 73-76.

DESCRIPTORS: *Cells (Biology), *Luminescence, *Microscopes, Microscopy.

A review of luminescence methods used in research at the Institute of Cytology, Academy of Sciences USSR.

Anatomy and Physiology

Aizenberg, M. F.
THE MORPHOLOGY OF THE SYMPHYSIS PUBIS [1963] [20]p. 18 refs. FASEB manuscript no. S75-3.
Order from OTS or SLA $1.60 63-23863
figs available from OTS on loan

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 43, no. 11, p. 68-76.

DESCRIPTORS: Morphology, *Bone, *Anatomy, *Joints (Physiology).

The symphysis pubis exhibits highly original features including sexual features and individual differences. In children and the majority of males the symphysis pubis is most frequently a jointless fusion to which the term symphysis is properly applied. The appearance of a fissure in the centre of the fibrocartilage provides some mobility and converts it into a hemiarthrosis which is no longer a junction but not yet a full joint. The greater the development of the central fissure the more this articulation approximates to a true joint. When the fissure extends through the whole height and thickness of the fibrocartilage and is closed by the peripheral ligaments which acquire an endothelium the articulation becomes mobile and is undoubtedly a true joint. (Author)

Astanin, L. P.
ALTERATIONS IN THE PROPORTIONS OF THE HUMAN HAND. [1963] [33]p. 47 refs. FASEB manuscript no. S 74-3.
Order from OTS or SLA $3.60 63-23862

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 43, no. 11, p. 58-67.

DESCRIPTORS: *Arms, Genetics, *Bones, Evolution, *Anthropometry, Anthropology.

Chocholle, René.
THE DIFFERENTIAL THRESHOLD OF INTENSITY IN THE PRESENCE OF A CONTRALATERAL TONE OF SAME FREQUENCY. [1963] 20p. 10 refs.
Order from SLA $2.60 63-18737

Trans. of J[ournal de] Physiologie (France) 1959, v. 51, p. 813-827.

DESCRIPTORS: *Hearing, *Thresholds (Physiology), *Audiometry, Audiofrequency, Neuromuscular transmission, Auditory nerve

According to the statistical studies carried out in this work, the differential thresholds obtained by measuring the intensity variations on one ear while simultaneously applying a steady tone of the same frequency to the other ear, are the higher, as the tone is binaurally in phase, and are the lower if the tone is out of phase, provided the frequency is lower than 1000 cycles/second. This phase effect can only be explained, at least statistically, if we assume the phase difference between the stimuli to be, at these frequencies, almost at the level of convergence of the right and left auditory paths. This presupposes that the cadence of the action-potentials, as transmitted by the auditory nerve in its entirety, closely follows the tone frequency. (Author)

Chocholle, René.
AUDITORY DIFFERENTIAL INTENSITY IN THE PRESENCE OF A CONTRALATERAL TONE OF THE SAME FREQUENCY. [1963] [27]p. 5 refs.
Order from SLA $2.60 63-18883

Trans. of Acustica (Switzerland) 1957, v. 7, p. 75-83.

DESCRIPTORS: *Audiometry, *Hearing, *Thresholds (Physiology), Attenuation, Attenuators, *Ear, Sensory mechanisms) Sound, Tests, Measurement.

Variations in the intensities received at one ear are measured while a steady tone of the same frequency is measured at the other ear. Examination of the response curves and their slopes in the middle portion, as well as of the differential thresholds, shows that there is always an attenuation in differential sensitivity. This phenomenon will be the more pronounced, the higher the intensity of tone on the other ear. It can be assumed that this effect is of cortical origin and is, perhaps, a question of contrast. (Author)

Gokhblit, I. I., Kornienko, I. A., and Dang-Tkhu.
ANALYSIS OF ELECTRICAL ACTIVITY OF CEREBRAL CORTEX (BREMER TECHNIQUE) IN DOGS AT VARIOUS AGE PERIODS [AND] ON LOCALIZATION OF FUNCTIONS OF THE CORTEX OF THE CEREBRAL HEMISPHERES IN RATS. REPT. II. CONDITIONED-REFLEXED ACTIVITY IN RATS FOLLOWING REMOVAL OF THE CORTEX OF THE OCCIPITAL LOBES. 20 Sep 63, 18p. 33 refs.
JPRS: 21169.
Order from OTS $0.50 63-31801

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1963, v. 55, no. 6, p. 14-24.

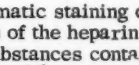
DESCRIPTORS: *Bioelectronics, *Cerebral cortex, *Aging (Physiology), *Conditioned reflex, Excision, Brain, Electroencephalography.

Jaques, R. and Küttner, K.
SELECTIVE DYE DISPLACEMENT ON BIOGENIC POLYELECTROLYTES AS A MODEL FOR LIBERATION OF BIOGENIC AMINES (Selektive Farbstoffverdrängung an Biogenen Polyelektrolyten als Modell für die Liberation Biogener Amine). May 63, 11p. 17 refs.
Order from SLA $1.60 63-18795

Trans. of Helv[etica] Physiol[ogica et Pharmacologica] Acta (Switzerland) 1961, v. 19, p. 335-343.

DESCRIPTORS: *Dyes, *Electrolytes (Physiology), Ion exchange, *Heparin, *Mucopolysaccharides, Biological stains, *Amines, Anatomical models

The changes in the metachromatic staining of mucopolysaccharides (polyelectrolytes of the heparin type) which take place upon addition of substances containing basic groups and which are a result of ion exchange reactions are used in three different in vitro systems. When substances of different biological activity are added in equivalent concentrations, the dye is released in a quantity dependent on the specific selectivity of a given substance for the active groups of the polyelectrolyte. The displacement of the dye may serve as an indicator of possible liberation mechanisms taking place in similar biological structures. (Author)

Küttner, K., Huber, G., and Jaques, R.
STUDIES ON ION EXCHANGE MODELS FOR UNDERSTANDING THE PHYSIOLOGY OF BIOGENIC AMINES: EXCHANGE BALANCES BETWEEN SODIUM AND AMINES ON AN ION EXCHANGER WITH (Untersuchungen an Ionenaustauschmodellen zum Verständnis der Physiologie Biogener Amine: Austauschgleichgewichte Zwischen Natrium und Aminen an Einem Ionenaustauscher mit  als aktive Zentren). [Feb 62] [5]p. 18 refs.
Order from SLA $1.10 63-18796

Trans. of Experientia (Switzerland) 1961, v. 17, 15 Nov, p. 495-496.

DESCRIPTORS: *Ion exchange, Physiology, *Genetics, *Amines, Ion exchange resins, *Sodium, Anotomical models, *Electrolytes (Physiology).

Matteo, G. di and Morabito, A.
FUNCTIONAL AND ANATOMIC FINDINGS WITH REGARD TO THE LYMPHATIC CIRCULATION OF THE UPPER EXTREMITY AS OBTAINED BY LYMPHANGIO-ANDENOGRAPHY (Rilievi Anatomo-Funzionali sul Circolo Linfatico nell'Arto Superiore Mediante Linfangioadenografia). [1963] 13p (figs. refs omitted)
Order from SLA $1.60 63-20201

Trans. of Annali Italiani di Chirugia, 1960, v. 37, p. 363-383.

DESCRIPTORS: Anatomy, *Lymphatic system, *Angiography, *Arms, Body fluids.

A report is given concerning two years' experience of lymphangiography of the upper extremity. Various technics were adopted and morphological conclusions were arrived at which are described in detail. By means of lymphadenoangiography functional knowledge was also gained of the lymphatic drainage of the arm. In view of the experience gained, the widely debated problem of the radical postmastectomy indurative edema is discussed. It is beleived that only some types of this kind of edema have a prevalent lymphatic etiology: Some probable physiopathological alterations of the tissues and of the collector network are discussed as well as preventive methods.

Nesterova, A. A.
THE EFFECT OF CERTAIN ENDOCRINE PREPARATIONS ON THE OCCURRENCE OF PATHOLOGICAL PROCESSES IN THE BREAST. 12 Sep 63, 8p. 4 refs. JPRS: 21043.
Order from OTS $0.50 63-31742

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1963 [v. 8] no. 3, p. 16-19.

DESCRIPTORS: *Hormones, Endocrine glands, *Estrogens, *Carcinogenic agents, *Mammary glands, Nervous system.

Obrosov, A. N., Skurikhina, L. A., and Safyulina, S. N.
EFFECT OF MICROWAVES ON THE CARDIOVASCULAR SYSTEM OF A HEALTHY PERSON. 12 Sep 63, 13p. 10 refs. JPRS: 21067.
Order from OTS $0.50 63-31755

Trans. of Voprosy Kurortologii, Fizioterapii i Lechebnoi Fizicheskoi Kul'tury (USSR) 1963, v. 28, no. 3, p. 223-229.

DESCRIPTORS: *Cardiovascular system, *Microwaves, *Radiation effects, *Feet, Heart.

Irradiation of the heart region of persons who are healthy for all practical purposes with microwaves (50 to 60 volts) and of the sole of the foot (70 to 80 volts) for 10 minutes with irradiator No 2 (diameter 11.5 centimeters), located 7 centimeters from the irradiated surface, is supported with no negative symptoms of subjective or objective nature. Under the influence of irradiation by the indicated method and dosage definite but weak reactions of the cardiovascular system arise, and the blood circulation of the subjects improves at sites symmetrical to the irradiated site: respiration and heart contraction are retarded, the T_3 peak is lowered, auricular-ventricular conductivity is retarded, arterial pressure drops and skin temperature rises at the irradiated, and symmetrical sections. Under the effect of microwave irradiation of the sole of the foot maximal and minimal pressure decrease, and blood circulation is improved at the irradiated and symmetrical sections. The above changes in the functional status of the cardio-vascular system are caused by reflex influences and local processes which arise during irradiation with microwaves. (Author)

Pavlov, I. P.
CONCERNING THE REFLEX INHIBITION OF SALIVA SECRETION. [1963] 27p 6refs
Order from SLA $2.60 63-18528

Trans. of Pflüger's Archiv f[ür] d[ie] Ges[amte] Physiol[ogie des Menschen und der Tiere] (Germany) 1878, v. 16, p. 272-292.

DESCRIPTORS: *Reflexes, Inhibition, Secretion, *Saliva, *Curare alkaloids, Drugs.

Petrov, V. S.
AN ELECTRON MICROSCOPIC STUDY OF THE NERVE CELLS AND CERTAIN EXTRACELLULAR ELEMENTS OF THE GANGLIA OF THE SOLAR PLEXUS. [1963] [22]p. 44 refs FASEB manuscript no. S 69-3.
Order from OTS or SLA $2.60 63-23860
Figs. available on loan from OTS

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 43, no. 11, p. 12-18.

DESCRIPTORS: *Electron microscopy, Nerve cells, *Ganglia, *Autonomic nervous system.

Rapaport, Angele.
RESEARCH OF THE SENSORIAL MECHANISM OF THE ACTIVITY OF SODIUM GLUTAMATE AS "AMELIORANT" OF FOOD TASTES: SODIUM GLUTAMATE AND GUSTATIVE RECAPTIVITY. [1963] 4p.
Order from SLA $1.10 63-16254

Trans. of Société de Biologie [et de ses Filiales. Comptes Rendus des Séances] (France) 1952 [v. 146] p. 378-380.

DESCRIPTORS: *Glutamic acid, *Taste, *Perception, *Thresholds (Physiology), *Condiments, Sodium compounds

Accordingly the hypothesis of a specific activity of the Na salt of glutamic acid on the gustative nervous cell manifesting itself by a lowering of thresholds is disproved. Hence the activity attributed to Na glutamate manifesting itself by an observed empirical "amelioration" (if such actually occurs) does not depend on the gustative neurosensorial mechanism. But the conditions of stimulation employed on a limited area of the tongue purposely exclude the possible activity of the Na glutamate, on the one hand, on the olfactive receptors via the retronasal route, and, on the other hand, on the salivary secretion. Now it is possible that the glutamate inactive on the gustative receptors acts on the olfactive receptors. And, on the other hand, a mechanism bringing about a qualitative and quantitative modification of the salivary secretion has been proposed as a possible cause of the phenomenon. Finally, the experimental conditions which we have employed exclude a possible action, which has likewise been proposed, of Na glutamate as a buffer of sapid solutions. (Author)

Scevola, M. E., Novati, C. Calchi, and Felisati, D.
DISTRIBUTION OF THE INHIBITORS OF TRYPSIN AND CHYMOTRYPSIN IN TISSUES OF DIFFERENT SPECIES OF ANIMALS. [1963] 3p (tables omitted)
Order from SLA $1.10 63-18765

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1954, v. 30, p. 261-263.

DESCRIPTORS: Inhibition, *Trypsin, *Chymotrypsin, Tissues (Biology), Animals, *Enzymes.

Shen, Tsi-chen, Liu, Shih-wei, Hsu, Yu-chi, Chang, Chuan, and Chao, Wen-chung.
A STUDY OF CERTAIN INTEROCEPTIVE REFLEXES AND THEIR INTERACTIONS. [1963] 22p (figs omitted) 19refs
Order from OTS or SLA $2.60 63-18529

Trans. of Sheng Li Hsüeh Pao (Chinese People's Republic) 1956, v. 20, no. 1, p. 37-49.

DESCRIPTORS: *Reflexes, *Reaction (Psychology), *Chemoreceptors, Intestines, Legs, *Neuromuscular transmission. Carotid sinus, Stimulation.

Chernigovsky's experiment was confirmed on 35 cats and 63 dogs; Chemoreceptors exist in the intestine and hind leg. It was found that dinitrophenol and paranitrophenol can stimulate these chemoreceptors, reflexively causing an increase in blood pressure and a change in respiration, sometimes accompanied by movement of the hind leg. Dinitrophenol and paranitrophenol have a stimulating action on the carotid artery of cats. Generally speaking, when the inhibitory impulses of the four buffer nerves are removed and the central excitatory state is enhanced a greater chemoreceptor reflex is obtained. However, when the central nervous system is inhibited by increasing the pressure within the carotid sinus, a decrease in the reflex results. Simultaneous stimulation of two or more chemorecptor areas tends to produce a summation of excitation in the nervous centers. This results in a more obvious increase of blood pressure and respiration. (Author)

Sologub, M. I.
CHANGES IN THE INTRACELLULAR RESTING POTENTIAL GRADIENT IN MUSCLE FIBER IN THE COURSE OF ALTERATION. [1963] [18]p. 2 refs. FASEB manuscript no. S166-3.
Order from OTS or SLA $1.60 63-23834

Trans. of Tsitologiya (USSR) 1962, v. 4, no. 5, p. 530-537.

DESCRIPTORS: *Bioelectronics, *Cells (Biology), *Muscles, Tissues (Biology), Electric potential, Biophysics.

Intracellular resting potentials of the altered muscle fiber of the sartorius muscle of the grass frog were investigated by a microelectrode technique. During continuous recording of resting potentials from the same area of a fiber, changes in the potentials were observed in time, the general character of which was similar to that of the intracellular action potential. When the tip of the microelectrode was displaced within the fiber at different stages of alteration, the resting potential showed different magnitudes. The results indicate that the intracellular gradient of resting potentials in time is absent in the normal fiber and arises only in the altered fiber. (Author)

Turpaev, Tigram Mel'kumovich.
ALBUMINE NATURE OF CHOLINE RECEPTOR: PHYSICO-CHEMICAL PROPERTIES OF CHOLINE RECEPTORS OF INTACT HEART MUSCLE, CHAP. 3: [SELECTED] PORTIONS AND TABLE OF CONTENTS, tr. by Tatiana Boldyreff. 12 July 63, 36p.
Order from OTS or SLA $3.60 63-23117

Trans. of mono. Medyatornaya Funktsiya Atsetilkholina i Priroda Kholinoretseptora (Mediating Function of Acetylcholine and the Nature of Choline Receptors) Moscow, 1962, p. 37-46, 49-59.

DESCRIPTORS: Albumins, *Cholines, *Chemorecptors, Heart, *Cardiac muscle, Biochemistry, Cholinesterase, *Neuromuscular transmission.

Vosteen, K. H.
NEW ASPECTS IN THE BIOLOGY AND PATHOLOGY OF THE INNER EAR. [1963] [107p] refs
Order from SLA $9.10 63-20017
Free copies available from Circulation Manager, Translations of the Beltone Institute of Hearing Research, 4201 West Victoria St., Chicago 46, Ill.

Trans. of Arch[iv für] Ohren-, Nasen- und Kehlkopfheilkunde (West Germany) 1961, v. 178, p. 1-104.

DESCRIPTORS: *Ear, Auditory nerve, *Hearing, End organs, Anatomy, Physiology, Electric potential, Electrolytes, Acetylcholine, Metabolism.

Biochemistry

Benard, Henri and Broer, Y.
FLUORESCENCE OF CERTAIN BILIARY ACIDS: FLUORESCENCE OF CERTAIN BILIARY ACIDS AFTER HEATING IN SULFURIC MEDIUM. [1963] 12p (figs. tables refs omitted)
Order from SLA $1.60 63-18764

Trans. of Soc[iété de] Chim[ie] Biol[ogique]. Bull[etin] (France) 1960, v. 42, p. 99-114.

DESCRIPTORS: *Bile, *Fluorescence, Sulfuric acid, Spectroscopy, Heating.

The index of fluorescence is very different from one bile acid to the other and the technical conditions in order to obtain its maximum value are not the same. The variations according to the rate of sulfuric acid used and the duration of the heating time are not of the same scope, and sometimes not of the same direction either. However, the index of desoxycholic acid is always higher than that of its congeners, particularly if sulfuric acid at 18.5 M and a heating time of 50 minutes, or on the contrary a sulfuric acid at 12.95 and a short heating time of 15 min. are used. In this latter technical modality the absorption of desoxycholic acid is less than that of cholic acid, but in view of the higher value of the index, the fluorescence is clearly higher. (Author)

Evstigneev, V. B. and Savkina, I. G.
MECHANISM OF THE PHOTOSENSITIZING ACTION OF CHLOROPHYLL AND PHTHALOCYANINE UNDER HETEROGENEOUS CONDITIONS. [1963] [12]p 34refs
Order from OTS or SLA $1.60 63-18603

Trans. of #Biofizika (USSR) 1963, v. 8 [no. 2] p. 181-190.

DESCRIPTORS: *Photosenthesis, *Chlorophylls, *Phthalocyanines, Oxidation-reduction reactions.

With the use of intermittent illumination and the oscillographic technique we studied in detail the potential changes with illumination of a platinum electrode bearing a film of phthalocyanine or chlorophyll and immersed in an electrolyte solution. It was established that the curves for potential change, reflecting photoelectrochemical processes at the film surface, appear to be the sum of no less than three components. A possible mechanism for their formation was developed. On the basis of data obtained in the present and in preceeding work on the capacity of illuminated pigments of the chlorophyll type to give or to receive electrons rapidly and reversibly, ideas were developed about the mechanism of photosensitization of redox reactions by pigments under heterogeneous conditions, including the generation of intermediate labile oxidized or reduced forms of the pigment by means of giving or receiving an electron. (Author)

Iłczuk, Zdzislaw.
STUDIES ON THE SYNTHESIS OF CITRIC ACID. I. INVESTIGATIONS ON CITRIC ACID PRODUCTION BY DIFFERENT STRAINS OF ASPERGILLUS NIGER.
20 Mar 62, 8p
Order from SLA $1.10 63-18938

Trans. of Acta Microbiologica Polonica, 1962, v. 11 [no. 3] p. 277-282.

DESCRIPTORS: *Biosynthesis, *Citric acids, *Phycomycetes.

The purpose of this work was to isolate the strains of Aspergillus niger active in the field of biosynthesis of citric acid production. Among 26 investigated strains half were producing citric acid with a yield of above 50% in relation to sucrose used in the medium. Three strains among them were quite highly active in citric acid production with yields of above 70% (79.6; 78.0; 71.6%). One strain showing an especially low activity produced only 9.5% of citric acid in the medium with sugar. (Author)

Karapetyan, N. V., Litvin, F. F., and Krasnovskii, A. A.
STUDY OF LIGHT TRANSFORMATIONS OF CHLOROPHYLL BY DIFFERENTIAL SPECTROPHOTOMETRY. [1963] [12]p. 28refs.
Order from OTS or SLA $1.60 63-18604

Trans. of #Biofizika (USSR) 1963, v. 8 [no. 2] p. 191-200.

DESCRIPTORS: *Chlorophylls, Photosynthesis, *Spectrophotometers, Absorption analysis.

For the measurement of differential absorption spectra we chose an apparatus with a mechanical separation in time of the measuring and activating light. The apparatus permits measurements of " light-dark" differential spectra of chlorophyll solutions and of living photosynthesizing organisms to be accomplished. The measured differential absorption spectra of chlorophyll in solution during its photoreduction and photooxidation appear extremely similar. Kinetic studies of the absorption changes disclosed that in the reversible photoreduction of chlorophyll there occurs along with the slower changes a rapid (within less than 1 sec) completely reversible stage. During photooxidation we observed a slow and mainly irreversible change of chlorophyll. Differential spectra were measured for the green alga Chlorella pyrenoidosa and the photosynthesizing bacteria Chromatium and Rhodopseudomonas palustris. It was established that in the light-dark differential spectrum of Chlorella the change in the red region with illumination is caused for the most part by fluorescence changes, while in the green region a change in absorption is observed. (Author)

Krasnovskii, A. A. and Pakshina, E. V.
COMPARATIVE STUDY OF PHEOPHYTIN FORMATION FROM CHLOROPHYLL AND ITS ANALOGS IN DARK AND LIGHT. [1963] [5]p. 8 refs.
Order from OTS or SLA $1.10 63-18600

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1963, v. 148 [no. 4] p. 935-938.

DESCRIPTORS: *Chlorophylls, Organic pigments, *Biosynthesis, Photosynthesis, Light

Küttner, K., Majer, H. and others.
STUDIES ON ION EXCHANGE MODELS FOR UNDERSTANDING THE PHYSIOLOGY OF BIOGENIC AMINES. I. EXCHANGE EXPERIMENT ON A RESIN WITH SULFURIC ACID GROUPS FOR UNDERSTANDING THE SO-CALLED HISTAMINE LIBERATION PROCESSES (Untersuchungen an Ionenaustauschmodellen zum Verstamdnis der Physiologie Biogener Amine. 1. Mitteilung. Austauschversuche an Einem Schwefelsäuregruppentragenden Harz zum Verständnis von Sogenannten Histaminliberationsvorgängen).
[Oct 62] 4p. 8 refs.
Order from SLA $1.10 63-18733

Trans. of Experientia (Switzerland) 1961, v. 17, 15 Aug, p. 371-372.

DESCRIPTORS: *Ion exchange, *Models (Simulations), Physiology, Amines, Biochemistry, *Ion exchange resins, Sulfuric acid, *Histamine.

Mixtures of histamine and other basic substances as hydrochlorides were added in equivalent amounts to an acid ion exchange system containing SO_4-groups in the H^+-form (Dowex 50 W x 2). After completion of the equilibrium the amounts of both the free histamine and the competing substance were determined by potentiometric titration. Values are presented for the relative amounts of either substance which are retained by the resin. The results obtained show that histamine and a given competing substance are selectively distributed on the resin. The method may be useful as a test for the possible histamine-liberating capacity of biologically important substances. (Author)

Kutyurin, V. M. and Knyazev, V. P.
WATER CONTENT IN CHLOROPHYLL a AND b. [1963] [5]p. 14 refs.
Order from OTS or SLA $1.10 63-18601

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1963, v. 149 [no. 2] p. 456-459.

DESCRIPTORS: Water, *Chlorophylls, Biosynthesis, Chemical analysis, *Organic pigments

Ladik, Janos.
JANOS LADIK'S CZECHOSLOVAKIAN STUDY TOUR. 19 Aug 63, 2p. JPRS: 20709.
Order from OTS $0.50 63-31567

Trans. of Magyar Tudomanyos Akademia Kemiai [Tudomanyok] Osztalyanak Kozlemenyei (Hungary) 1963, v. 19, no. 4, p. 477-478.

DESCRIPTORS: Chemists, Absorption spectrum, *Desoxyribonucleic acids, Atomic orbitals, Mutations, *Biochemical genetics.

An account of Dr. Kouteczky's investigations on the quantum chemical examination of biologically important compounds is given. Topics include the electronic absorption spectra of aromatic hydrocarbons, the mutual interaction of parallel benzol rings, and the interaction of ethylene molecules. The electronic structure of DNA was more accurately approximated via these studies. A brief discussion is also given of Janos Ladik's work on the mechanism of mutation genesis as it is related to the DNA structure.

Randerate, Kurt.
POLYETHYLENE IMINE CELLULOSE: A NEW ANION EXCHANGER FOR THE CHROMATOGRAPHY OF NUCLEOTIDES. [19 Apr 63] [6]p. 7 refs.
Order from SLA $1.10 63-18372

Trans. of Biochim[ica et] Biophys[ica] Acta (Netherlands) 1962, v. 61, p. 852-854.

DESCRIPTORS: *Nucleotides, *Nucleosides, Phosphates, *Ribonucleic acids, Separation, *Chromatographic analysis, *Ion exchange resins, *Polyethylene plastics, *Imines, *Cellulose.

The separation of ribonucleoside-mono-, di- and triphosphates on thin layers from polyethylene imine cellulose is described.

Shlyk, A. A. and Nikolaeva, G. N.
METABOLIC MANIFESTATION OF CHLOROPHYLL HETEROGENEITY IN GREEN PLANTS. [1963] [12]p 32refs
Order from OTS or SLA $1.60 63-18605

Trans. of #Biofizika (USSR) 1963, v. 8 [no. 2] p. 201-211.

DESCRIPTORS: Metabolism, *Chlorophylls, Plants (Botany), Photosynthesis.

New chlorophyll molecules arising in the process of pigment renewal are not immediately mixed with the old, and differ from them in their physico-chemical properties. Consequently chlorophyll in different forms participates differently in metabolism. An expecially clear metabolic heterogeneity is registered in experiments with short-time $C^{14}O_2$ assimilation by green plants by an increased specific activity of that pigment fraction that is easily extracted by weakly polar solvents. It was shown that the lowering of specific activity by deeper extraction has a stepwise character, giving evidence of a discrete difference between the forms. By keeping the plants in the dark these differences are smoothed out. Consequently the different forms occur in immediate proximity to one another and therefore there exists the possibility of a slow transformation of molecules from one form to the other. All of these rules relate to both chlorophyll a and b. The manifestation of metabolic heterogeneity is obliterated in leaves forming the main mass of their chlorophyll after the assimilation of $C^{14}O_2$. (Author)

Usami [Shoji] and Taketomi, Noboru.
COMPARISON OF MOLASSES AND GLUCOSE MEDIA FOR CITRIC ACID FERMENTATION. [1963] [10p] 6refs
Order from SLA $1.10 63-18870

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 10, p. 1603-[1605].

DESCRIPTORS: *Glucose, *Citric acids, Molds, *Fermentation, Ash, *Culture media, Potassium, Iron

A study was made of acid formation in citric acid fermentation using Asp. niger. in molasses (Taiwan molasses) and glucose media. In molasses medium, the consumption of oxygen in the early stage of the cultivation is fairly bigger and the starting time of acid formation is earlier than those in glucose medium due to the abundant nourishment in the medium. But the amount of citric acid formed is very low and oxalic acid formation is observed at the same time. Inhibition factors of citric acid formation were studied by adding ash components of molasses to glucose medium, or by mixing molasses to glucose medium in different ratio. It was concluded that organic, non-sugar components in molasses are one of the inhibition factors of citric acid formation, and inorganic components in it give considererable effects on the citric acid fermentation too. Oxalic acid formation in molasses medium is due to the strong buffer action of the medium whose pH does not go down even when ammonium sulfate is added to it as nitrogen source. (Author)

Microbiology

[Chen, Chih-tsung and Chen, Lin-tsung].
[STUDIES ON THE GLUTAMIC ACID FERMENTATION]. II. COMPOSITION OF THE CULTURE GROUNDS. 1. ON THE SOURCE OF CARBON. [1963] 7p. (tables omitted) 3 refs.
Order from SLA $1.10 63-16190

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 298-301].

DESCRIPTORS: *Glutamic acid, *Fermentation, *Culture media, Biosynthesis, Carbon, Bacteria, Glucose, *Micrococcus.

As a result of the examination concerning the applicability of several carbon sources on bacteria No. 1942, it was discovered that glucose and sucrose are good. As the glucose sources, either the hydrochloric acid or sulfuric acid, saccharified solutions of cassava starch can be employed. In the case of sucrose, the amount of the production of glutamic acid changes markedly by the different kinds of the cane sugar materials. An examination was also carried out by using black strap molasses as the source of sucrose. However, no glutamic acid was produced. With regard to the concentration of glucose, the yield of glutamic acid as compared with the sugar consumed was the greatest when it was 5 percent. However, in view of the anticipated cost for the recovery of glutamic acid from the broth, it is more advantageous that the concentration of glutamic acid in the broth be in the range between 7 and 10 per cent. (Extracted) (See also 63-16189)

[Chen, Chih-tsung and Chen, Hwan-feng]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. V. COMPOSITION OF THE CULTURE GROUND. 4. ON THE PROMOTOR SUBSTANCES. [1963] 5p. (tables omitted) 4 refs.
Order from SLA $1.10 63-16193

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 307-309].

DESCRIPTORS: *Glutamic acid, *Fermentation, *Culture media, Stimulation, Biosynthesis, *Micrococcus, Bacteria, Vitamin B complex.

The promotor effects of biotin in the production of glutamic acid are conspicuous. The most suitable concentration of biotin is in the range between 2 and 3 (gamma) per liter. The use of PCH alongside shows no particular difference from the use of biotin and PCH separately and individually. The use of biotin alone has the promotor effect comparable to that of PCH. As compared with the rice bran extract, wheat bran extract, yeast extract and the corn steep liquor, biotin and PCH have superior promotor effects. As a result of tests on the effects of adding several kinds of inorganic salts, it was found that only NaCl and $MgSO_4$ have promotor effects in the production of glutamic acid. The mixed use of $MgSO_4$ and other inorganic salts did not show any conspicuous difference from the use of $MgSO_4$ alone. Even though the promotor effects of phosphates are conspicuous, there is not much difference between KH_2PO_4 and K_2HPO_4. Comparatively speaking, good results are obtained when the ration between K_2HPO_4 and K_2HPO_4 is either 0.1 : 0.2 per cent or 2 : 0.2 per cent. (Author) (See also 63-16192)

[Chen, Chih-tsung and Chen, Hwan-feng]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. VIII. ON THE METHOD FOR THE PRESERVATION OF BACTERIA. [1963] 5p. (tables omitted) 1 ref.
Order from SLA $1.10 63-16196

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 314-315.

DESCRIPTORS: *Glutamic acid, *Fermentation, *Culture media, Bacteria, Preservation, *Micrococcus, Biosynthesis.

As for the isinglass slant cultures for the preservation of bacteria, those with an addition of 1.0 per cent of meat extract, 10 per cent of peptone, and 0.5 per cent of NaCl or those with the same additions plus an addition of 0.25 per cent of glucose are proper. Inasmuch as the bacteria stock will have a lower capacity for fermentation of conspicuous differences in efficiency among the various cells, when transplantation is repeated on the slant culture grounds many times, we carried out tests on the selection of strong bacteria by plate isolation and the preservation of the efficiency by the sand culture, in order to cope with the problems. As a result, a good result was obtained in each case. It was confirmed, in particular, that the sand culture is a highly reliable method for their preservation, capable of preserving the efficiency of the bacteria for a comparatively long period of time. (Author) (See also 63-16195)

[Chen, Chih-tsung and Huang, Tsung-fu]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. XI. ISOLATION OF GLUTAMIC ACID IN FERMENTATION SOLUTION, 1. [1963] 7p. (tables omitted) 3 refs.
Order from SLA $1.10 63-16199

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 322-324].

DESCRIPTORS: *Glutamic acid, *Fermentation, Separation, *Culture media, Biosynthesis, Bacteria, *Micrococcus, Chlorides, Chemical precipitation.

As for the methods for the separation of glutamic acid from the fermentation solution, tests were carried out on the method of educing glutamic acid from a concentrated broth at its isoelectric point and on the method for separating glutamic acid in the form of a hydrochloride. Glutamic acid which was educed at pH 3.2 from the concentrated broth accompanied a large amount of impurities; and it was difficult to refine it with water-cleaning alone. This crude glutamic acid is dissolved in hydrochloric acid and recrystallized with pH at 3.2. Glutamic acid which was obtained in this manner proved to have satisfactory purity. In either case, however, the yield is slightly low. On the assumption that the yield may be raised by increasing the concentration of the broth, tests were carried out on those whose concentration rates are one-fourth, one-fifth and one-sixth. The purity of glutamic acid, however, turned out to be unsatisfactory, except for the one with the concentration rate of one-fourth. As a result, it was confirmed that recovery from the waste solution will have to be considered in order to increase the yield. (Author) (See also 63-16198)

[Chen, Chih-tsung and Huang, Tsung-fu]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. XII. [ISOLATION] OF GLUTAMIC ACID IN THE FERMENTATION SOLUTION, 2. [1963] 7p. (figs. tables omitted) 12 refs.
Order from SLA $1.10 63-16200

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 324-327].

DESCRIPTORS: *Glutamic acid, *Fermentation, *Culture media, Separation, Bacteria, *Micrococcus, Electrodialysis.

The result of a test which was conducted on the concentration of the glutamic acid fermentation solution by the electrolytic dialysis is given. By using an electrolytic cell using the positive ion exchange films and the negative ion exchange films alternately as diaphragms, an electrolytic dialysis of the broth was carried out by applying a fixed voltage. As a result, when the density of the electric current at the initiation was 0.7 amperes per dm^2, approximately 90 per cent of glutamic acid in the dilution cells moved to the concentration cells in a period of 360 minutes; when the density of the electric current was 1.0 amperes per dm^2, approximately 90 per cent of glutamic acid in the dilution cells moved to the concentration rooms in a period of 240 minutes; and when the density of the electric current was 1.4 amperes per dm^2, approximately 90 per cent of glutamic acid in the dilution rooms moved to the concentration cells in a period of 150 minutes. The density of the electric current gradually comes down together with the progress of the electrolysis due to the lowering of the electrolytic concentration. In order to prevent the lowering of the density of the electric current and carry out the electrolysis and concentration effectively, the supply of the material and the exhausting of the diluted solution should be carried out continuously. (Author)
(See also 63-16199)

[Chen, Chih-tsung and Shen, Wen-kwei]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. IV. COMPOSITION OF THE CULTURE GROUND. 3. ON THE PROMOTOR SUBSTANCES. [1963] 5p. (tables omitted) 4 refs.
Order from SLA $1.10 63-16192

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 304-307.

DESCRIPTORS: *Glutamic acid, *Fermentation, Biosynthesis, *Culture media, Bacteria, Micrococcus, Proteins.

Examinations were made concerning the promotor effects of the hydrochloric acid decomposed solutions of the blan cake, peanut cake and casein on the production of glutamic acid by bacteria No. 1942. As a result of these examinations, it was found that the decomposed solution of peanut cake (PCH) is the best, The most suitable amount of pCH whose total nitrogen is approximately 2 per cent is in the range between 2 and 3 per cent. The rice bran extract, wheat bran extract, yeast extract and the corn steep liquor all have the effect of promoting the production of glutamic acid. The most suitable amounts were found to be 2, 5 and 5 per cent respectively. The addition of these extracts of natural substances and PCH was found to be not much different from the addition of PCH alone. The addition of these extracts of natural substances with CH was found to be inferior to the addition of PCH alone. In other words, it can be concluded that it is the best to use PCH in an amount of from 2 to 3 per cent as the promotor substance in the fermentation of glutamic acid by bacteria No. 1942. (Author) (See also 63-16191)

[Chen, Chih-tsung and Shen, Wen-kwei]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. VII. ON THE PRE-CULTURE AND THE AMOUNT OF INJECTIONS. [1963] 5p. (table omitted). Order from SLA $1.10 63-16195

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 311-313.

DESCRIPTORS: *Glutamic acid, *Fermentation, Biosynthesis, *Culture media, Injection, *Micrococcus, Bacteria.

As a result of a test conducted by using a culture solution consisting of glucose 2.0, urea 0.2, $(NH_4)_2SO_4$ 0.2, KH_2PO_4 0.2, $MgSO_4 \cdot 7aq.$ 0.04 and $FeSO_4$ 0.01 per cent as the basic culture ground for the preculture and adding PCH or biotin as the promotor substance, it was observed that 4 per cent of PCH or 10γ per liter of biotin is suitable. As the source of nitrogen, 0.2 per cent of urea and 0.2 per cent of $(NH_4)_2SO_4$ or 0.4 per cent of $(NH_4)_2SO_4$ alone is good. As the source of sugar it was observed that 2 per cent of either glucose or sucrose is good. The best result is obtained when the time for the pre-culture is around 24 hours. At this time, the amount of the bacteria bodies will reach the highest and the amount of the remaining sugar will reach the neighborhood of the minimum. It was confirmed that 5 per cent is sufficient as the amount of the inoculation of the pre-culture. (Author) (See also 63-16194)

[Chen, Chih-tsung and Tu, Tsung-ming]. [STUDIES ON THE GLUTAMIC ACID FERMENTATION]. III. COMPOSITION OF THE CULTURE GROUND. 2. ON THE SOURCE OF NITROGEN. [1963] 6p. (tables omitted) 5 refs.
Order from SLA $1.10 63-16191

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 301-304].

DESCRIPTORS: *Glutamic acid, *Fermentation, Bacteria, *Micrococcus, Nitrogen, *Culture media, Biosynthesis.

As a result of the examination of the applicability of several kinds of nitrogen sources for bacteria No. 1942, it was recognized that urea, $(NH_4)2SO4$ and NH_4Cl are good. Mixtures of urea and $(NH4)2SO4$ or $NH4Cl$ were used as the nitrogen sources which might kill the defects of each other. Nevertheless, it is desirable that such nitrogen sources as will not accumulate the remaining ions like, $SO4''$ or Cl', be used for the purpose of making the process for the recovery of glutamic acid from the broth easier. In this sense, the use of urea without any other addition is considered to be the best. In order to see to it that the pH does not incline too much toward the alkaline side during the course of the fermentation and that a sufficient amount of NH_3 is supplied, a method for dividing urea into several amounts and adding them gradually was employed. With regard to the addition of urea during the course of the fermentation, the gradual additions of several amounts are better than the one-time addition of urea after the passage of 24 hours from the initiation of the culture. This has a close bearing upon the supply of NH_3 and the control of pH during the course of the fermentation. (Extracted)
(See also 63-16190)

[Chen, Chih-tsung, Shen, Wen-kwei, and Chen, Hwan-feng].
[STUDIES ON THE GLUTAMIC ACID FERMENTATION]. X. ON Kd (OXYGEN ABSORPTION RATE CONSTANT). [1963] 6p. (figs. tables omitted) 14 refs.
Order from SLA $1.10 63-16198

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 318-321].

DESCRIPTORS: *Glutamic acid, *Fermentation, Biosynthesis, *Culture media, *Oxygen consumption, Bacteria, Absorption (Biology), *Micrococcus.

As a result of a test conducted for the determination of the relationship between Kd and the amount of the production of glutamic acid by bacteria No. 1942, by changing Kd through a change in the solution in an agitation culture using a triangular flask of a capacity of 500 milliliters, it has been found that, within the scope of the present experiment, the amount of the production of glutamic acid increases together with an increase in Kd and that the most suitable Kd is at least 4.09 by 10^{-6} (g-mole O_2/atmosphere. minute. milliliter). Next, Kd was measured by using a 5-liter jar fermentor the intake of 2 liters under the conditions including the number of agitations in the range between 200 and 600 rotations per minute and the amount of ventilation in the range between 1 and 4 liters per minute. As a result, it was observed that the range is 13.90 by 10^{-6} and that the minimum is 0.44 by 10^{-6} and that, as compared with the amount of ventilation, the number of agitations exerts a far greater effect upon Kd. It was found that the best Kd range is in the neighborhood of 4.40 by 10^{-6}. (Extracted) (See also 63-16197)

[Chen, Chih-tsung, Tu, Tsung-ming, and Chen, Lin-tsung].
[STUDIES ON THE GLUTAMIC ACID FERMENTATION]. I. EXAMINATION OF POWERFUL KIND OF BACTERIA. [1963] 9p. (tables omitted) 11 refs.
Order from SLA $1.10 63-16189

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 295-298].

DESCRIPTORS: *Glutamic acid, *Fermentation, Bacteria, Biosynthesis, *Micrococcus, *Culture media.

For the purpose of carrying out a basic study on the manufacture of glutamic acid, the authors collected the samples from a wide area of farms, paddy fields, and factories in Taiwan, and tried the isolation of powerful bacteria therefrom. From among 94 kinds obtained by the first screening, 16 kinds were selected as being capable of producing glutamic acid at a yield greater than 10 per cent as compared with the sugar. Among these, 5 kinds were selected as being capable of producing glutamic acid at a yield greater than 20 per cent as compared with the sugar. It was observed that these five kinds can all be purified by the repetition of plate isolation and that, in this manner, their capacity for the production of glutamic acid can be stabilized. The crystals of l-glutamic acid were isolated from the fermentation solution obtained through the culture of bacteria No. 1942. It was confirmed that their constant values agree with those reported in the literature. (Author)

[Chen, Chih-tsung, Tu, Tsung-ming, and Chen, Lin-tsung].
[STUDIES ON THE GLUTAMIC ACID FERMENTATION]. IX. ON THE ADJUSTMENT OF pH. [1963] 5p. (tables omitted) 5 refs.
Order from SLA $1.10 63-16197

Trans. of [Hakko Kogaku Zasshi (Japan) 1959, v. 37, no. 8, p. 315-318].

DESCRIPTORS: *Glutamic acid, *Fermentation, *Culture media, Bacteria, Biosynthesis, Micrococcus, Growth, *Hydrogen ion concentration.

As a result of the test for the determination of the most suitable pH for the production of glutamic acid by bacteria No. 1942, it was observed that good results are obtained when pH is 7.0 at the time of the initiation of the culture when pH is constantly adjusted to remain over 7.0 even during the fermentation. When a culture ground having urea as the main source of nitrogen as in the present experiment is used, pH rises after the initiation of the culture but pH again comes down afterward by the production of acid due to the decomposition of the sugar. At this time, the adjustment of pH was carried out by using NaOH or NH_4OH. The latter showed a greater amount of the production of glutamic acid. It is obvious that this is due to the supply of NH_3, besides the adjustment of pH. The addition of NaOH or NH_4OH finds a quick response in pH; however, there is a defect in that the effect is not long-lasting. It is thus necessary to carry out the adjustment frequently in order to maintain pH within a fixed range. It was observed that the use of urea, which is slow in receiving the response but can give a long-lasting effect, can be used, for the purpose of adjusting pH and supplying NH_3, Urea should be added only when pH comes down to the range between 6.6 and 7.2.. It was observed that the result is obviously better if urea is added in several sections. (Author) (See also 63-16196)

Fiechter, A.
SMALL PLANT FOR CONTINUOUS CULTURE OF MICROORGANISMS (Kleinanlage zur Kontinuierlichen Zuchtung von Mikroorganismen). [1963] [26]p. (foreign text included) 36 refs.
Order from SLA $2.60 63-18732

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1962, v. 34, no. 10, p. 692-696.

DESCRIPTORS: *Microorganisms, *Fermentation, Culture media, Biochemistry.

A new fermenter system is described which opens new paths for microbiological process technology. The control circuits for the control of pH and foam are designed so that they are equally useful for industrial and laboratory-scale operations. Through the use of O-rings instead of gaskets the facility assures complete freedom from infection since this type of seal cannot be penetrated by any growing organism. Also described are steam-sterilizable types of diaphragm pumps, feed valves, and flowmeters for air and liquids. (Author)

Mirolyubova, L. V., Tabakov, P. K. and others.
THE FLUORESCENT-SEROLOGICAL METHOD IN THE DIAGNOSIS OF TYPHOID AND A AND B PARATYPHOID FEVER [AND] A RAPID METHOD OF OBTAINING ANTIBODIES LABELLED WITH FLUORESCENT STAINS. 28 June 63, 13p 17refs. JPRS: 19936.
Order from OTS $0.50 63-31159

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 10, p. 3-7 and [26-30].

DESCRIPTORS: Fluorescence, Serum, *Diagnosis, *Typhoid, *Antigens and antibodies, Labeled substances, *Fluorescent dyes, *Tracer studies, *Biological stains, Globulins.

The luminescent-serological method is a promising one in blood testing and can be used for the accelerated laboratory diagnosis of typhoid and A and B paratyphoid. The luminescent-serological method, with cultivation and concentration of the initial material (blood) is more sensitive than the hemoculture isolation technique. (Mirolyubova and Dvurechinskaya). A new method for the isolation of immune euglobulins (antibodies) from agglutinating anti-plague and anticholera serums was proposed; a new method of purifying the labelled antibodies from the fluorochrome excess has been presented With the new method of isolating and purifying antibodies, the time required to prepare luminescent conjugates is shortened from 3-4 weeks to 3-4 days. The suggested method of preparing fluorochrome-labelled antibodies is realizable in any laboratory, since it requires no special equipment (refrigeration centrifuges and rooms). The advantages of a new luminescent stain--fluorescein isothiocyanate, over fluorescein isocyanate are shown. The immune euglobulins isolated by the new method were classifiable among the γ-globulins in their electrophoretic composition. (Tabakov, et al.)

Slavina, G. P.
DECANE OXIDIZING BACTERIA ISOLATED FROM DEPTH WATERS OF NORTHERN CISCAUCASUS. 21 Aug 63, 2p. 1 ref. JPRS: 20758.
Order from OTS $0.50 63-31595

Trans. of #Mikrobiologiya (USSR) 1963, v. 32, no. 3, p. 403-404.

DESCRIPTORS: *Oxidation, Bacteria, *Methanes, Hydrocarbons, *Pseudomonas, Taxonomy, Marine biology.

From a deep well of the Krasnodarskiy kray gas deposits a decaone-oxidizing culture has been isolated that is identified as the Ps. putida var. thermophillus. The culture utilizes hydrocarbons, primarily the liquid ones (heltane, octane) and grows best in a decane atmosphere. The optimum growth is at 45-55° it tolerates brief heating up to 70-80°. (Author)

Telegina, Z. P.
A STUDY OF THE ADAPTATION OF INDIVIDUAL SPECIES OF SAPROPHYTIC MICROFLORA TO GASEOUS HYDROCARBON OXIDATION. 21 Aug 63, 7p 6 refs. JPRS: 20759.
Order from OTS $0.50 63-31596

Trans. of #Mikrobiologiya (USSR) 1963, v. 32, no. 3, p. 398-402.

DESCRIPTORS: *Adaptation (Physiology), Bacteria, Ecology, Hydrocarbons, Oxidation, Soils, *Microorganisms, Culture media, Nutrition, Plants (Botany).

Cultures of Bac. mesentericus, Bac. mycoides as well as microorganisms similar to Ps. rubra, Ps. liquida, and Chromobact. naphtalani species that grow profusely on organic media (nutrient agar, ethyl and butyl alcohol) are practically incapable of utilizing methane, ethane, propane or butane as the sole source of carbon even after preliminary cultivation for one to eight months in an atmosphere of these hydrocarbon gases. (Author)

Pathology

ARCHIVES OF IMMUNOLOGY AND EXPERIMENTAL THERAPY, 1963, VOL. 11, NO. 3, P. 297-476. 1962, lv. PL-480 HEW.
Order from OTS $1.75 63-11410/3

English ed. of [Archivum Immunologiae et Therapiae Experimentalis] (Poland) 1963, v. 11, no. 3.

DESCRIPTORS: *Immunology, *Therapy, *Clostridium perfringens, Antigens and antibodies, *Listeria, *Salmonella, *Tubercle bacilli, Staphylococcus, Antibiotics, *Resorcinol, *Acetylcholine, Tetanus, Toxins and antitoxins, Glutathione, *Histamine, Shock (Pathology), Benzenes, *Benzedrine sulfate, *Hematoencephalic barriers, Respiratory system, *Muramidase,

Contents:
The polysaccharides of Clostridium perfringens, by F. Meisel-Mikolajczyk
Comparative studies on the antigenic structure of eight strains of Listeria monocytogenes, by H. Tubylewicz
Antigenic variation of S. flexneri Ib bacilli in vivo, by M. Mulczyk and T. M. Lachowicz
Nutritional requirements of S. flexneri bacilli. I. Basic growth factors of standard strains of S. flexneri, by T. M. Lachowicz and others
Studies on differentiation of tubercle bacilli isolated from human beings, cattle and poultry. I. Morphologic and cultural characteristics, by T. Szulga and others
Studied on differentiation of tubercle bacilli isolated from human beings, cattle and poultry. II. Enzymic activity, by T. Szulga and others
Studies on the resistance of Staphylococcus aureus, Shigella dysenteriae and Proteus vulgaris to the polypeptide antibiotic tetaine. I. The development of bacterial resistance after single exposure to tetaine, by J. Borowski
The antifungal properties of hexylresorcinol, by B. Lipnicki
Acetylcholine liberated from the nerve-muscle preparation in tetanus toxin poisoning, by W. Fal and L. Czerchawski
Synthesis of glutathione in chrysoidine hepatoma in mice, by R. Richter
The thiocyanate space in histamine shock, by E. Rogala and S. Kosmider

Structure-activity relationship in the phenylisopropylamine group. IV. The action of dl-m and p-di-(2-aminopropyl)-benzenes on blood circulation and respiration, by W. Wojewodzki
The influence of drugs with various permeability through the vasculo-cerebral barrier on the microphonic potential of the organ of Corti. II. Levels of the drugs in the cerebrospinal fluid, by J. Gieldanowski
Evaluation of results of treatment on some respiratory diseases, based on mathematical analysis, by T. Norski and others
Lysozyme levels in the sera of guinea pigs and rabbits in the course of experimental tuberculosis, by M. Metzger and T. Szulga.

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY: [SELECTED] TRANSLATIONS NO. 51. 23 Sep 63, 60p JPRS: 21177.
Order from OTS $1.75 63-31806

Trans. (some excerpts, some summaries) of Chung Hua Wai K'o Tsa Chih (Chinese People's Republic) 1963, v. 11, no. 5, p. 339-418.

DESCRIPTORS: *Scientific research, *China, *Cartilage, *Obstruction (Physiology), *Anomalies, *Trigeminal nerve, Esophagus, *Tumors, *Hypothermia, Hemorrhage, *Shock (Pathology), *Intestines, *Prosthetics, Hernia, *Abscesses, Ascaris,*Tuberculosis, *Nephritis, *Lymphatic system, *Cancer, Thorax, *Plastic surgery, Heart, *Joints (Physiology), *Parenteral infusion, Reproductive system.

Contents:
Wear and tear in articular cartilage, by T'ien Te-hsiang and others
Surgical treatment of insufficient blood supply to the brain due to occlusion of carotid arteries, by Su Hung-hsi and others
Dexioarcus aortae, by Ling Hung-ch'en and others
Certain basic problems in trigeminal tractotomy, by Wu Shun and Meng Kuang-yuan
Preliminary studies on the use of decompression of trigeminal root in the treatment of trigeminal neuralgia, by Tuan Kuo-sheng and others
Decompression of trigeminal root for treatment of trigeminal neuralgia, by Yang Te-t'ai and Shih Yu-ch'uan
Analysis on 50 cases of trigeminal neuralgia, by T'ien Chun-ming and Chang Hung-chih
A case of esophageal stricture due to a cartilaginous ring, by Liu K'un
Trigeminal fibroma, by Yiao Chao-k'ang and Chiang Hsien-hui
Clinical use of abdominal hypothermia, by Li Pao-hua and others
Report on a case of adenoma of trachea located near the protuberance, by Lei P'ei-jen and Li Hung-min
Effects of cauterization and site injections in the prevention of shock from blood loss experimental studies, by Shen Yung-k'ang and others
The mechanism of action of site injections in massive blood loss, by Shen Yung-k'ang and others
Manipulation treatment of acute twisting of small intestines; the Tien-po method, by Hsia Pao-shu and others
Management of massive resection of small intestine, by Lung Kuo-ts'ui and others
Rectal resection by the abdomino-perineal route with intact anus for treatment of benign rectal structures, by Li Pao-hua
Use of reeled pongee in repair of extensive defects of the abdominal wall, by Feng Yu-hsien and others
Anteroperitoneal repair of hernia, by Ou Yang-ch'ien and others
Report on three cases of obturator hernia, by Chu Hsueh-chung and others
Clinical observations on ascarial liver abscess, by Wang Chia-chieh and others
Tuberculosis of the abdominal wall, by Yang Tai-yen and Ting Li
The long-range effect of ligation of lymphatics at the kidney pedicile for treatment of chyluria, by Hsieh Y'ung and others
Ligation of lymphatics at the kidney pedicle for treatment of chyluria, by Ho Tsung-li and Chang Ch'ang-shui
Epidermoid cyst of testis, by Wu Kuo-tung and Li Lan
Aorto-esophagogastric fistula, a complication at site of esophagogastrostomy following resection of carcinoma of esophagus, by Hunag Kuo-chun
Local treatment with herbs for tuberculosis pyrothorax wound and tuberculosis sinus tracts of chest wall, by Chang Yen-t'ing and others
Repair of infundibular stenosis with indigenous artificial blood vessel lined with pericardium, by Li Wen-jen and others
Axillary block of brachial plexus, by Wen Chun and others
Surgical treatment of fresh ruptures of medical collateral ligaments of knee joint, by Sung Che-hua
Parental fluid administration in the treatment of intestinal obstruction in children, by Chang Chin-che
Induration of the penis, by Ma Yung-ch'ing and others.

CURRENT PROBLEMS OF HELMINTHOLOGICAL SCIENCE. 16 Sep 63, 30p. 42 refs. JPRS: 21099.
Order from OTS $1.00 63-31771

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963 [v. 28] no. 4, p. 497-513, 630-634.

DESCRIPTORS: *Worms, *Ascaris, Parasites, Immunity, Epidemiology, Animals, Conferences.

Contents:
Immediate tasks of helminthological science and practice at the present historical stage, by K. I. Skirabin
Some problems of immunity in helminthology, by N. P. Shikhobalova and E. S. Leikina
The work of the Scientific Conference of the All-Union Society of Helminthologists, Moscow, Dec 62, by E. S. Leikina and others.

HERALD OF THE ACADEMY OF MEDICAL SCIENCES USSR, 1963, VOL. 18, NO. 7. 26 Sep 63, 167p JPRS: 21228.
Order from OTS $3.00 63-31829

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 7, p. 3-101.

DESCRIPTORS: *Medical research, *Medicine, Immunity, Infections, Pathology, *Metabolism, Proteins, Enzymes, *Atherosclerosis, *Regeneration, Tissues (Biology), *Rhythm (Biology), Cells (Biology), *Polyploidy, *Prosthetics, Blood vessels, *Biochemical genetics, *Ribonucleic acids.

Contents:
Principles of experimental and clinical immunomorphology, by Ya. L. Rapoport
Immunomorphological phenomena during the course of a single acute infectious disease, by A. P. Avtsyn
New research methods in modern pathological anatomy, by A. I. Strukov
Function, structure and protein metabolism of the hypertrophied myocardium, by F. Z. Meerson and others
The role of lipolytic enzymes in the pathogenesis and pathology of arteriosclerosis, by F. L. Leites
Regeneration and compensatory hypertrophy, by L. D. Liozner
The significance of the rules and regulations of the diurnal periodicity of cell division, by V. N. Dobrokhotov
The significance of polyploidy and binucleated cells in processes of physiological regeneration, by S. S. Laguchev.
Cytogenetic changes in the bone marrow cells in some forms of leukemia, by E. F. Davidenkova and N. N. Kolosova
Indices of biological inertness of synthetic materials for vascular prostheses (according to morphologic data), by N. A. Bykova and N. B. Dobrova
Informational ribonucleic acid (the problem of transfer of hereditary information in the cell) by E. P. Zdrodovskaya
Conference on Problems of Regeneration and Cell Division (no. 3) Moscow, Dec 62, by A. P. Avtsyn

I. C. R. S. MEDICAL REPORTS, 1963, VOL. 5, NO. 1. Jan-Mar 63, 55p.
ORDER FROM Institute of Contemporary Russian Studies, Fordham U., New York, 58, N. Y. $1.00

Consists of English reviews of reports on current research, selected news briefs, reports on congresses and meetings, and other items, published chiefly in Soviet medical periodicals.

DESCRIPTORS: *Medicine, Pathology, Physiology, *Medical research, Symposia, *Gastrointestinal system, Secretion, Geography, USSR, Abstracts, Scientific organizations

Contents:
Scientific meetings of 1962: calendar plan
Physiology and pathology of the intestinal secretory system, by S. A. Boguslavsky
Medical geography of the USSR, reviewed by J. P. Ransom
Communist news briefs

I. C. R. S MEDICAL REPORTS, 1963, VOL. 5, NO. 2 AND INDEX VOL. 4 (SUPPLEMENT). Apr-June 63, 32p.
Order from Institute of Contemporary Russian Studies, Fordham U., New York, 58, N. Y. $1.00

Consists of English reviews of reports on current research, selected news briefs, reports on congresses and meetings, and other items, published chiefly in Soviet medical periodicals.

DESCRIPTORS: *Medicine, *Medical research, Space biology, Microbiology, Bone marrow, Burns, Serum, Poliomyelitis, Medical personnel, Pharmacology, Abstracts, Scientific organizations, Indexes.

Contents:
Izvestiya: items of current interest to the research and clinical community
Space biology
Rumanian Inst. of Inframicrobiology
Bone-marrow bank-burn serum
Poliomyelitis Conference-Hungary
Landau's case history
Organization and personnel of the Institute of Pharmacology and Chemotherapy, Academy of Medical Sciences USSR, by A. J. Sica and A. B. Boguslavsky
Source material on chemistry of pharmacologic agents reported in Soviet literautre and abstracted in Chemotherapy Research Bulletin, by A. J. Sica and A. B. Boguslavsky
Reports of the Academy of Medical Sciences USSR, by E. W. Fenwick and E. L. Nowicki
Communist news briefs.

POLISH MEDICAL JOURNAL, 1962, VOL. 1, NO. 2/3, P. 219-474. 1962, 1v. PL-480 HEW.
Order from OTS $2.50 62-11066/2

DESCRIPTORS: Poland, *Medicine, Pathology, *Cancer, *Atherosclerosis, *Epinephrine, Cardiac muscle, *Anemias, *Erythrocytes, *Blood coagulation, Solar eclipse, *Hodgkins disease, Viruses, Gastrointestinal system, *Peroxidase, Bacteriphages, *Tuberculosis, *Hepatitis, Milk, *Antigens and antibodies, *Convulsive disorders, *Phosphorus transferases, Mechanical organs, *Anomalies, *Plastic surgery, *Radiotherapy, Uterus, Radiation effects, *Eye, Edema, *Vasoactive agents, *Hyperthryoidism, *Hearing, Tumors, Bone, *Vitamin E, Kidneys, *Epithelium, *Pregnancy.

Contents:
Effect of X-rays and degranol on the incorporation of thymidine into Ehrlich's ascites tumor of mice and rat bone marrow in vitro, by J. Jasinska and A. Michalowski
Studies on carbohydrate metabolism in atherosclerosis, by D. Aleksandrow and others
The influence of norepinephrine on the carbohydrate metabolism of heart muscle and on the coronary circulation, by Z. Semerau-Siemianowski and others
Level of serum iron and copper in anaemias of various origin, by H. Dabiski
Survival time of the red blood cells in patients with chronic cor pulmonale, by J. Roguski and others
Effect of the latest sun eclipse on February 15, 1961 in Cracow on the blood coagulation: thromboelastographic studies in a healthy subject, by T. Tempka and others
The ultrastructure of the cells in lymphogranulomatosis, by J. Blicharski
The blood ammonia level in the diagnosis of the source of hemorrhage from the upper gastrointestinal tract, by W. Olszewski
Quantitative determination of peroxidase activity: the influence of various factors, by S. Kwiek and K. Pichula

The effect of mycophage D-29 on unidentified acidfast mycobacteria, by W. Kurylowicz and M. Buraczewska
Cholesterol and the level of titer of antistreptolysin O in the blood serum of children with viral hepatitis, by T. Skalmowski and others
The level of serum antistreptolysins O and lipo-proteid fractions in viral hepatitis in children, by T. Skalmowski and others
Studies on the immunio-isoantibodies in human milk, I-II, by W. Dzierkowa-Borodej and others
The results of clinical and electroencephalographic investigations in paroxysmal vegetative disorders in children, by I. Lenartowska and A. Koslacz-Folga
Studies on the urinary acid phosphatase levels as an index of the sexual maturity of boys, by L. Stasiak and others
Studies on extracorporeal circulation when using the Kay-Cross heart-lung machine, by W. Bross and others
Congenital arteriovenous cirsoid aneurysm of the pulmonary circulation cured surgically, by W. Bross
Complications following irradiation of patients with uterine cervix cancer: the influence of the general health condition before the treatment on the survival time, by A. Wieczorkiewicz and others
Blepharochalasis with coexistent oedema of lids and goitre as a syndrome, by P. Segal and S. Jablonska
Influence of some vasoconstricting drugs on the cochlear microphonic potential, by W. Jankowski and others
The influence of some vasodilators on the microphonic cochlear potential, by W. Jankowski and others
X-ray diagnosis of cholesteatoma, by A. Kaczurba
An attempt to determine the value of autogenous spongy bone grafts infected with saliva in refilling bone defects, by J. Zemla
The effect of vitamin E on the experimental damage to parodontium by hyaluronidase in albino rats, by W. Zaleski and others
Histochemical studies on the early stages of the development of the tooth germ. I. Polysaccharides, by Z. Nowicki
Distribution of the arteries in the human kidney, by Z. Piasecki and others
Morphological changes in the mouth epithelium of women in early pregnancy, by M. Glowinski and H. Golab
Antistreptolysins in renal diseases, by J. Pokora.

STUDIES IN ANESTHESIA AND LUNG SURGERY. 11 Sep 63, 47p. 83 refs. JPRS: 21037.
Order from OTS $1.25 63-31737

Trans. of Khirurgiya (USSR) 1963, v. 39, no. 7, p. 25-33, 39-43, 80-82, 106-112, 115-122.

DESCRIPTORS: Anesthesia, *Lungs, *Surgery, *Anesthetics, Ethanes, Fluorides, *Electroencephalography, Drugs, *Heart arrest, *Medical examination, *Angiography, *Muscle relaxants.

Contents:
Pro and con fluothane anesthesia, by V. M. Yurevich
Electroencephalography in superficial fluothane anesthesia, by V. Yu. Ostrovskii and R. G. Alekhina
The problem of reflex cardiac arrest during anesthesia, by E. G. Mil'ner
Dangers and complications in a special examination of patients with lung diseases, by O. S. Shkrob and V. S. Pomelov
Angiopneumography in the diagnosis of the middle-lobe syndrome, by A. G. Kochetkova
The use of endotracheal anesthesia with muscle relaxants for severe injury during emergency surgery, by Yu. V. Shapiro.

TREATISES OF THE SECTION OF MEDICAL SCIENCES, 1959 [VOL. 4, NO. 1] P. 1-272. 1963, 1v 378refs PL-480 HEW.
Order from OTS $2.75 61-11335/6

Trans. of [Polska Akademia Nauk]. Wydzial Nauk Medycznych. Rozprawy, 1959 [v. 4] no. 1, p. 1-254.

DESCRIPTORS: *Medicine, *Pathology, *Angiography, Radiography, *Heart, Blood vessels, *Virus diseases, *Salivary glands, Surgery, *Hypothermia, *Isoniazid, Thyroid gland, *Cancer, Skin.

Contents:
Experimental radiological studies of the heart and great vessels in dogs, by Janusz Bowkiewicz
Cytomegalic inclusion disease, by Witold Brzosko
Experimental cardiac surgery under hypothermia, by J. Nielubowicz and others
The effect of isonicotinic acid hydrazide (INH) on the thyroid gland, by Andrzej Rosnowski
Krompecher's carcinoma (Adnexoblastoma Cutis) (A morphological study) by Leszek Wozniak.

WORK OF THE INSTITUTE OF HIGHER NERVOUS ACTIVITY, PATHOPHYSIOLOGICAL SERIES, 1961, VOL. 9, FUNCTIONAL PATTERNS OF HIGHER PARTS OF THE ANIMAL CNS UNDER PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS, tr. by Y. S. Halperin. 1963, 225p. 338 refs. PL-480 HEW.
Order from OTS $2.25 63-11170

Trans. of Akademiya Nauk SSSR. Institut Vysshei Nervnoi Deyatel'nosti. Trudy: Seriya Patofiziologicheskaya, 1961, v. 9.

DESCRIPTORS: *Nervous systems, Pathology, *Physiology, *Psychology, Brain, Cerebral cortex, Rats, *Conditioned reflex, Infants, *Reflexes, *Leukocytes, Drugs, *Stimulation, Respiration, Brain, Carbon dioxide, Gastrointestinal system, Food, *Cerebral cortex, *Hemorrhage, *Reaction (Psychology), Autonomic nervous system, Ovary, *Neuroses, *Anaphylaxis Behavior, *Chlorpromazine, Drugs, *Diphtheria, *Curare alkaloids, Parasympatholytic agents, *Staphylococcus, Infections, Toxicity, *Penicillin, X-rays, *Radiation effects, Radiobiology.

Contents:
Mechanisms of activity of higher parts of the CNS in white rats, by L. I. Kotlyarevskii
Patterns of formation of a conditioned reflex in response to a 3-member chain stimulus in white rats, by Nguen Tkhien Tkhan'
Some aspects of cerebral cortical function in white rats during ontogenesis, by A. P. Chesnokova

Some aspects of formation of conditioned reflexes in white rats in the early postnatal period on the background of normal and functionally altered conditions, by L. S. Gorsheleva and G. L. Vanetsian

The compensatory-protective nature of the conditioned leukocyte reflex in rabbits, elaborated to a pharmacological stimulus, by L. I. Kryachko

Experiments on elaboration of a conditioned respiratory reflex in white rats by combining an indifferent sound stimulus with inhalation of carbon dioxide, by L. I. Kryachko

The respiratory component of conditioned alimentary and electric-defense reflexes in white rats, by U. G. Gasanov

Studies on conditioned alimentary reflexes to cutaneous electric excitation used as a food signal, and in experimental defense situations, by R. K. Borukaev

Interrelationships between switched over conditioned associations with changes in the functional state of the cerebral cortex in dogs, by R. K. Borukaev

Certain mechanisms of activity of higher parts of the CNS in dogs following massive hemorrhage, by L. I. Kotlyarevskii, and others

Effect of electric stimulation of some vegetative structures in the subcortical region on conditioned reflexes under physiological and pathological conditions, by A. B. Fokina

Effect of an altered functional state of higher parts of the CNS on the development of malignant tumors in rats, by V. I. Klimova

Functional and morphological changes in ovaries of white rats in experimental neurosis, by E. B. Pavlova

Anaphylaxis in adrenalectomized rats under conditions of functional overstrain of nervous processes, by R. K. Borukaev

Mechanisms of the dynamic stereotype in physiological defense measures, by V. I. Luk'yanenko

Effect of aminazine on the activity of higher parts of the central nervous system in white rats, by S. M. Makokina

Effect of multiple aminazine injections on the activity of higher parts of the CNS of white rats during diphtheria intoxication, by S. M. Makokina

Functional interrelationships between the cerebral cortex and subcortical structures following the action of tropacin, by R. Yu. Il'yuchenok

Dynamics of changes in cortical activity due to repeated injections of tropacin, by R. Yu. Il'yuchenok

Changes in conditioned reflex activity of white rats under the influence of curare-like preparations, by A. I. Briskin, and B. A. Flerov

Histochemical changes in the reticular formation of the brain stem in animals under the influence of aminazine and imizine, by Yu. Ya. Geinisman

Effect of staphylococcal intoxication in dogs on the morphology of the cortex and subcortical structures, by M. M. Aleksandrovskaya

Morphological changes in the CNS in relation to penicillin treatment of staphylococcal infection, by M. M. Aleksandrovskaya

Changes in conditioned reflex activity of dogs due to prolonged total body irradiation with a maximum nonlethal x-ray dose, by L. I. Kotlyarevskii and K. N. Lyubimkina

Dynamics of changes in the activity of higher parts of the CNS in white rats irradiated in the early postnatal period, by A. P. Chesnokova

Nervous mechanisms of higher nervous activity in animals during repeated irradiation with small x-ray doses, by L. E. Khozak

Disturbances in higher nervous activity of white rats following irradiation with small doses, by L. G. Samoilova

Bardina, R. A.

ALTERATIONS IN THE MICROSTRUCTURE OF THE WALLS OF ARTERIAL COLLATERALS FOLLOWING DEAFFERENTATION OF THE CANINE HIND LIMB. [1963] [32]p. 62 refs. FASEB manuscript no. S 451-2. Order from OTS or SLA $3.60 63-23848
figs. available on loan from OTS

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 43, no. 10, p. 61-70.

DESCRIPTORS: *Blood vessels, *Arteries, Legs, Histology, Excision, Nerves, *Autonomic nervous system, *Blood circulation, Reflexes, Dogs.

Elimination of the afferent link in the reflex arc of the canine hind limbs (deafferentation) has an effect on the formation of arterial collaterals that develop after resection of major arteries in the extremity. The wall structure of the arterial collaterals underwent considerable modification mainly affecting the muscle layer and the elastic framework. There is atrophy of the muscle fibers in the main circular muscle layer. At the same time a new longitudinal layer of muscle cells between the internal elastic lamina and the tunica media develops as if to compensate for the weakened activity of the main muscle layer. When the afferent link of the reflex arc has been eliminated this layer does not develop greatly. The elastic framework of the vascular wall is gradually destroyed and this leads to loss of elasticity in the arterial collaterals. Owing to muscular atrophy and degeneration of the elastic tissue, and the consequent loss of muscular tone and elasticity in the vascular wall the arterial collaterals become limp tubes playing only a passive part in collateral circulation. Consequently the arterial collaterals formed in deafferentation are not entirely satisfactory. (Author)

Gross, F.

PATHOPHYSIOLOGY OF EXPERIMENTAL RENAL HYPERTENSION (Zur Pathophysiologie des Experimentellen Renalen Hochdruckes). [Apr 63] 20p. 50 refs.
Order from SLA $1.60 63-18771

Trans. from mono. Hypertonie Symposium (no. 3) [Münster, 25-26 Aug 61] Stuttgart, 1962.

DESCRIPTORS: Pathology, Physiology, *Hypertension, *Kidneys, *Corticosteroid agents, Drugs, Urine, Secretion.

The renin concentration detectable in the kidney is reversely proportionate to the sodium chloride intake. Much renin is found in sodium depletion, little in retention of this ion. There is no indication that the renin content of the kidneys and with it probably the secretion are increased in renal hypertension, but a relatively increased secretion cannot be excluded. Renal hypertension is bound to the presence of the adrenals, but is not due to aldosterone overproduction. Renin, aldosterone, possibly other cortical hormones and sodium collaborate in the development of experimental renal hypertension, without any absolute increase in any of these substances. Nevertheless a disturbed regulation is possible, the mechanism of which is not yet known. It is assumed that the intact kidney forms renin and simultaneously an inactivating principle controlling the passage of renin and in turn the liberation of angiotensin into the systemic circulation. The formation of a hypotensive substance by the

kidneys cannot be excluded, but most of the observations agree with the working hypothesis of an inactivating mechanism. (Author)

Gurvich, A. S.
THE MORPHOLOGY OF THE NERVE ELEMENTS OF THE CAROTID SINUS REGION IN KITTENS DURING THE FIRST MONTH OF LIFE IN NORMAL AND ANOXIC CONDITIONS. [1963] [17]p. 33 refs. FASEB manuscript no. S 214-3.
Order from OTS or SLA $1.60 63-23829

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1963, v. 44, no. 1, p. 69-77.

DESCRIPTORS: Morphology, *Nerve cells, *Carotid sinus, *End organs, Cats, Infants, *Hypoxia, Chemoreceptors.

Itkin, S. I.
MORPHOLOGICAL CENTRAL NERVOUS SYSTEM CHANGES IN BURNS. 12 Sep 63, 4p. 4 refs. JPRS: 21041.
Order from OTS $0.50 63-31740

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1963 [v. 8] no. 3, p. 71-73.

DESCRIPTORS: *Burns, Brain, Nervous system, *Nerve cells, *Ribonucleic acids, *Edema, Morphology, Nucleoproteins

Burns covering 20 to 25% of the body surface were induced in guinea pigs. The changes in the morphology of the nerve cells and the ribonucleic acid (RNA) content and distribution in each division of the central nervous system were determined following death of the animals. Comparable studies were done on animals killed at the same time. In animals that died, the ribonucleoprotein (RNP) was absent in the nerve cells. It was preserved in the cells in the animals that had been killed. In animals killed 2 months after the burn many nerve cells showed the same morphological changes as seen in those killed a shorter time after the burn. The RNA distribution 2 months after the burn approximated the normal. In early death, edema was present in all the cerebral centers. The RNP was either liquified or pathologically distributed in the animals that died. Burn trauma produces changes in the RNP content and distribution of all centers in the central nervous system. Edema of the brain was found in all cases of early death following burns. No edema was present in animals that died or were killed 7 days or later after the burn. Death in the early period after a burn is apparently due to the compression of the vital centers resulting from the edema of the brain.

Jacotot, H., Guillon, J. C. and others.
EXPERIMENTAL ALLERGIC ENCEPHALOMYELITIS IN THE PIG (L'Encephalo-Myelite Allergique Experimentale chez le Porc). [1963] 4p. (figs. omitted) 4 refs.
Order from SLA $1.10 63-18507

Trans. of Revue Francaise d'Allergie, 1962, v. 2, no. 3, p. 127-132.

DESCRIPTORS: *Encephalitis, Swine, *Allergy, *Antigen-antibody reactions, Nervous system, Sensitivity

Subcutaneous or intramuscular injection of a small quantity of normal homologus nervous tissue suspended in paraffin oil produced nervous symptoms, often fatal, in a large percentage of pigs. The origin of the nervous symptoms is the inflammatory perivenous lesions of the white matter which characterize allergic encephalomyelitis or demyelinating leukoencephalomyelitis. The most serious illnesses, of hyperacute type, generally appear 5-8 days after inoculation. Stimulated by oily adjuvant, the organism apparently elaborates specific antibodies which immediately attack the corresponding tissue elements of the nervous system. By a single injection, the "preparative" and "evocative" effects were produced which classically require at least two exposures to the allergen. Doubtless, this is the result of the peculiar aptitude of pigs to become sensitized and of the intense stimulation exerted by the oily adjuvant. (Extracted)

Karpova, N. I.
CHANGES IN THE PERIPHERAL NERVE TRUNKS FROM THE EFFECT OF VIBRATION (EXPERIMENTAL STUDY). 12 Sep 63, 7p. 10 refs. JPRS: 21053.
Order from OTS $0.50 63-31750

Trans. of Arkhiv Patologii (USSR) 1963 [v. 25] no. 7, p. 49-53.

DESCRIPTORS: *Nerves, Nervous system, *Vibration.

To ascertain the pathologico-histological changes occurring in the peripheral nerves under the action of vibration experimental investigations were undertaken on rabbits, subjected to prolonged action of local vibration (frequency 40 cycles/sec. amplitude-1,35 mm) for 3 hours daily. The right posterior extremity was subjected to vibration. Specimens for histological examination were created by the methods of Nissl, Kakhal-Favorsky, Veigert and Marki. Polyneuritis phenomena were detected in the peripheral nerves. Wallerian degeneration was noted in individual fibers, whereas in others—periaxonal changes were revealed. The lesions were most pronounced in the distal portions of the plantar and tibial nerves. (Author)

Lange, Cornelia de.
ABOUT THE NEW DEGENERATIVE TYPE (TYPUS AMSTELODAMENSIS) (Sur un Type Nouveau de Degénération (Typus Amstelodamensis)). [1963] 5p (figs. omitted)
Order from SLA $1.10 63-20202

Trans. of Archives de Médicine des Enfants (France) 1933, v. 36, p. 713-719.

DESCRIPTORS: *Anomalies, *Mental deficiency, Bone.

Lyutkevich, G. A.
CONFERENCE OF OPHTHALMOLOGISTS OF NORTHERN CAUCASUS ON SANATORIUM AND HEALTH RESORT TREATMENT OF EYE DISEASES. [KISLOVODSK, MAR 63]. 11 Oct 63, 5p JPRS: 21426.
Order from OTS $0.50 63-31931

Trans. of Vestnik Oftal'mologii (USSR) 1963, no. 3, p. 79-82.

DESCRIPTORS: *Conferences, *Eye, Diseases, *Opthalmology, *Health resorts, Therapy.

Mchedlishvili, G. I.
THE UTILIZATION OF DIFFERENTIAL MANOMETRY (PARTICULARLY, THE HÖRTHLE METHOD) IN STUDIES OF THE CEREBRAL CIRCULATION. 6 Sep 63, 3p. 13 refs. JPRS: 20951.
Order from OTS $0.50 63-31691

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1963 [v. 7] no. 3, p. 75-76.

DESCRIPTORS: *Blood pressure, *Brain, *Blood circulation, Arteries, Aorta

Differential manometry can be utilized successfully for the study of the peripheral and regional circulation. However, the Hürthle method, that is, the derivation of a coefficient on the basis of the readings of two manometers, cannot be considered acceptable for the evaluation of the cerebral circulation. The unsoundness of this method is clearly seen from careful acquaintance with his original work.

Mel'kov, Yu. N.
IMMUNODIAGNOSTIC TESTS OF MALIGNANT GROWTHS IN MAN: A REVIEW (Immunodiagnosticheskie Testy Prizlokachestvennom Roste u Cheloveka). [1963] [20]p. 112 refs.
Order from OTS or SLA $1.60 AEC-tr-5653

Trans. of #Voprosy Onkologii (USSR) 1962, v. 8, no. 1, p. 107-117.

DESCRIPTORS: *Diagnosis, *Cancer, *Antigen-antibody reactions, Immunity.

Milliez, P., Lagrue, G. and others.
HYPOTENSIVE ACTION OF A KIDNEY EXTRACT IN THE RABBIT UNDER EXPERIMENTAL ARTERIAL HYPERTENSION. II. MODE OF ACTION AND DISCUSSION OF ITS MECHANISM (Action Hypotensive d'un Extrait de Reins Chez le Lapin en Hypertension Arterielle Experimentale. II. Modalites de Cette Action et Discussion de Son Mecanisme). [1963] 8p. 7 refs.
Order from SLA $1.10 63-18450

Trans. of Pathologie et Biologie (France) [1963] v. 11, no. 3/4, p. 184-187.

DESCRIPTORS: *Hypotension, Arteries, *Hypertension, *Tissue extracts, Drugs, Biological products, *Kidneys.

drop in normotensive animals. The hypotensive action of pig kidney acetone extracts in the rabbit who has been made hypertensive decreases beginning on the 30th day after arterial hypertension has set in; the hypotensive action becomes nil by the 60th day. The hypotensive substance contained in pig kidney acetone extracts is dialyzable and water soluble. Acetone extracts of striated muscle and sheep heart, prepared in an identical manner, have no hypotensive effect. The facts observed, compared with those in the literature, show that the action is not hypotensive but anti-hypertensive. Simultaneous injection of pig kidney acetone extracts and angiotensin does not impede the hypertensive action's occurrence. (Author)

Negovskii, V. A.
PROBLEMS OF REANIMATOLOGY IN THE TRAUMATIC CLINIC. 25 Sep 63, 11p 43refs JPRS: 21215.
Order from OTS $0.50 63-31822

Trans. of Ortopediya, Travmatologiya i Protezirovanie (USSR) 1963, v. 24, no. 6, p. 11-18.

DESCRIPTORS: *Shock (Pathology), *Clinical death, *Blood transfusions, *Resuscitation, *Heart, Burns, Hypothermia, Surgery, Metabolism, Respiration.

A review is given of therapeutic measures used in the treatment of traumatic shock conditions with emphasis on work done in the Laboratory of Experimental Physiology on the Revival of the Organism of the Academy of Medical Sciences USSR. In terminal states arterial venous infusions of blood were found more advantageous than intravenous infusions. Exchange replacement of blood helps to normalize metabolism. Successful use of tracheostomy has been made to correct disturbances of gas exchange in the lung. The most effective form of artificial respiration was found to be positive pressure respiration with the use of muscle relaxants. In the presence of cardiac arrest, direct or indirect heart massage in combination with artificial respiration is recommended. The use of anesthesia must be tempered with judgment based on the stage of the shock because if severe hypoxia and acidosis exist, anesthetic substances in usual doses may exert a suppressive or toxic effect. Hypothermia has been used to prolong the permissible period of clinical death prior to the complete restoration of body functions. The above therapeutic measures are explained in detail.

Okhnyanskaya, L. G.
BIOELECTRICAL ACTIVITY OF MUSCLES IN OCCUPATIONAL NEURO-MUSCULAR DISEASES. 11 Sep 63, 10p. 14 refs. JPRS: 21034.
Order from OTS $0.50 63-31735

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1963, v. 7, no. 7, p. 13-19.

DESCRIPTORS: Bioelectronics, *Industrial medicine, Diseases, Nervous system, Muscles, *Musculoskeletal system, Arms, *Neuromuscular transmission, *Electromyography.

The most characteristic changes in bioelectrical activity of muscles for the group of patients examined are as follows: a) increase in amplitude of bioelectrical activity at rest and during reflex changes in tonus in wrist extensors, especially of the right hand; b) decrease in amplitude of bioelectrical activity fluctuations in wrist flexors and tremor present at the beginning and end of the movement; c) disturbance of reciprocal relationships of wrist flexors and extensors together with the presence of equalization and distortion reactions in the flexor muscle group. Changes in bioelectrical activity for the examined group of patients are not related to gross disorders of the neuromotor system, but are functional in nature. Their origins can involve pathological afferent impulsation, weakening of cortical control, and heightened excitability of motor neurons. The results obtained point to the possibility of using EMG data in diagnosing diseases of the neuromuscular system caused by over stressed muscles, and also for evaluating therapeutic measures used. These results also refine our ideas of the pathogenesis of the diseases studied. (Author)

Pavlenko, S. M.
PROBLEMS OF CAUSALITY IN MEDICINE BY I. V. DAVYDOVSKII: CRITICAL REVIEW. Review of mono. Problemy Prichinnosti v Meditsine (Etiologiya) Moscow, 1962. 11 Sep 63, 12p. JPRS: 21024.
Order from OTS $0.50 63-31729

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1963 [v. 7] no. 3, p. 77-82.

DESCRIPTORS: *Medicine, Etiology, *Diseases, Biological environment, Communism.

Perov, O. V.
EXPERIMENTS ON HUMAN BEINGS IN MODERN FOREIGN MEDICINE (REVIEW OF THE LITERATURE) 10 Oct 63, 7p JPRS: 21408.
Order from OTS $.50 63-31916

Trans. of Sovetskoe Zdravookhranenie (USSR) 1963, v. 22, no. 7, p. 71-76.

DESCRIPTORS: *Communicable diseases, *Vaccines, *Antigen-antibody reactions, Skin, Public health, Medicine, Reviews.

Seeger, W. and Schultheiss, G.
ENDOCRINE SLOWING OF METABOLISM IN THE Rx OF ACUTE CENTRAL DISTURBANCES (Endokrine Stoffwechseldrosselung in der Behandlung Akuter Zentraler Störungen). [1963] [12p]
Order from SLA $1.60 63-20220

Trans. of Zentralbl[att] f[ür] Chirurgie (East Germany) 1960, v. 85, p. 1146-1154.

DESCRIPTORS: Endocrine glands, *Metabolism, *Wounds and injuries, *Brain, Spinal cord, Nervous system, Iodine, Drugs, Corticosteroid agents

The paper deals with the use of metabolic slowing in the Rx of acute central dysregulations which has been in cases of acute decerebration and lesions of the cervical spinal cord. As shown in animals, the metabolism of the CNS can be markedly lowered with the use of iodine and desoxycorticosterone. Half of the 14 patients with symptoms of decerebration survived, 2 defective recoveries were in cases of circumscribed injuries of the brain substance. 3 lesions of the cervical spinal cord were treated successfully. The cause of death was usually a pulmonary complication. The possibility of sequelae has been discussed. (Author)

Shenderov, L. A., Zhukova, E. I., and Lappo, M. F.
MALIGNANT TUMOR OF THE HYPOPHYSIS WITH MULTIPLE METASTASES (Zlokachestvennaya Opukhol' Ginofiza s Mnozhestvennymi Metastazami) tr. by Tatiana Boldyreff. 5 June 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-23118

Trans. of Vrach[ebnoe] Delo (USSR) 1956, no. 8, p. 861-862.

DESCRIPTORS: Tumors, *Cancer, Neoplasms, *Pituitary gland.

A case history.

Shirvindt, B. G. and Protoklitova, N. S.
CONFERENCE ON BOTKIN'S DISEASE IN CHILDREN. 20 Sep 63, 8p JPRS: 21172.
Order from OTS $0.50 63-31804

Trans. of Voprosy Okhrany Materinstva i Detstva (USSR) 1963 [v. 8] no. 7, p. 89-92.

DESCRIPTORS: Conferences, *Hepatitis, Children, Infections, Liver viruses.

Tarnow, G.
BRAIN TUMORS AND PREGNANCY (Hirntumor and Schwangerschaft). [1963] 30p (refs omitted)
Order from SLA $2.60 63-20223

Trans. of Zentralblatt für Neurochirurgie (East Germany) 1960, v. 20, p. 134-158.

DESCRIPTORS: *Tumors, *Brain, *Pregnancy, Cancer.

Experience with 97 women who were pregnant and at the same time had brain tumors is reported. The tumors are discussed separately according to location and type. It was attempted to outline an ℞ for pregnant women with brain tumors from the experience with these studied cases. The ℞ varies with the location of the tumor, the clinical picture and the duration of the pregnancy. (Author)

Tripod, J.
DESFERRIOXAMINE (La Desferrioxamine). [May 63] 5p 23 refs.
Order from SLA $1.10 63-18742

Trans. of Nouvelle Revue Française d' Hématologie, 1963, v. 3, p. 1-4.

DESCRIPTORS: *Iron compounds, *Metabolism disorders, *Antimetabolites.

Volgareva, N. P.
NEOPLASTIC DISEASES ACCORDING TO AUTOPSY DATA OF THE CHAIR OF PATHOLOGICAL ANATOMY OF THE FIRST MOSCOW MEDICAL INSTITUTE FOR 20 YEARS (1963-1958). 12 Sep 63, 14p. 35 refs.
JPRS: 21040.
Order from OTS $0.50 63-31739

Trans. of Arkhiv Patologii (USSR) 1963 [v. 25] no. 7, p. 72-80.

DESCRIPTORS: *Neoplasms, Vital statistics, Cancer, Tumors.

A study was made of autopsy material of the Pathological Department of the First Moscow Medical Institute for 1939--1958, inclusively. The number of tumours, particulary of cancer of various localizations, has increased progressively alongside with a reduction of the incidence of infectious diseases. Cancer of the stomach ranked first among other localizations of the tumour, cancer of the lungs--second. Cancer of the stomach, and especially of the esophagus and lungs, occurs much more frequently in men. During the postwar years the surgical aid rendered in cancer of various organs is on the rise; this being due to improved diagnosis. During statistical treatment of autopsy data one should take into consideration the specialization of curative institutions as well as the possibility of concentration of patients with certain diseases, this influencing the ratio of the main affections. (Author)

Yakovlev, A. M., Krasnopevtseva, O. S., and Komleva, G. G.
THE PROBLEM OF AUTOIMMUNIZATION FACTORS OF THE BODY IN BURNS. 6 Sep 63, 5p. 6 refs.
JPRS: 20949.
Order from OTS $0.50 63-31689

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1963 [v. 7] no. 3, p. 30-33.

DESCRIPTORS: *Burns, *Immunity, Tissue extracts, *Antigens and antibodies, Skin, Antigen-antibody reactions, Complement, Serum

It is shown that in the sera of some patients with burns antibodies are found which react with antigenic substance present in an extract of burned skin and absent from similar extracts of normal skin in the complement-fixation test. These antibodies are not found in the sera of healthy donors or some patients with somatic diseases. (Author)

Pharmacology and Toxicology

PROCESS FOR PREPARATION OF STABLE AND ODORLESS SOLUTIONS OF VITAMIN A AND RESULTING PRODUCTS. [1963] 7p.
Order from OTS or SLA $1.10 63-18635

Trans. of French patent 1,000,746 [appl.] 16 Nov 49 [pub.] 2 Feb 52.

DESCRIPTORS: *Vitamin A, Odors, Inhibition, Processing, Drugs, Manufacturing methods.

THE TREATMENT OF NATURAL PRODUCTS CONTAINING VITAMINS: SUMMARY. [1963] 1p
Order from OTS or SLA $1.10 63-18190

Partial trans. (summary) of French patent 767,191 [1934].

DESCRIPTORS: *Vitamins, *Oils, *Fish oils, Distillation.

Arquet, M.
PROCESS FOR STABILIZATION OF VITAMIN A. [1963] 2p. 1 ref.
Order from OTS or SLA $1.10 63-18628

Trans. of French patent 913,993 [1946].

DESCRIPTORS: *Vitamin A, Stabilization, Drugs, Manufacturing methods, Processing.

Becker, Fritz and Söhring, Klaus.
DETERMINATION OF ANALGESIC EFFECTS IN ANIMAL EXPERIMENTS. II. INVESTIGATION OF A NEW GROUP OF COMPOUNDS WHICH REDUCE THE CONDUCTANCE IN THE NERVE TRUNK BY AN IN SITU INFILTRATION METHOD IN WARM-BLOODED ANIMALS. [1963] 24p 45refs
Order from SLA $2.60 63-18869

Trans. of Deutsche Zeitschrift für Nervenheilkunde (West Germany) 1950, v. 164, p. 381-394.

DESCRIPTORS: *Analgesics and antipyretics, Drugs, Nerves, Nervous system, Anesthetics, *Neuromuscular transmission, Inhibition, *Autonomic agents, Autonomic nervous system, Animals.

Brüggemann, J., Niesar, K.-H., and Zentz, C.
THE BIOLOGICAL ACTIVITY OF d-α, dl-α- AND l-α-TOCOPHEROL PREPARATIONS. 22 Jul 63, 16p 19refs
Order from SLA $1.60 63-18943

Trans. of Intern[ationale] Z[eitschrift für] Vitaminforsch[ung] (Switzerland) 1963, v. 33, p. 180-196.

DESCRIPTORS: *Vitamin E, *Biological assay, Molecular isomerism, Drugs

The biological activity of various d-, dl-, and l-α-tocopherol preparations was tested in the hemolysis test in rats. It was shown that d-α-tocopheryl acetate, depending on the application form, has a relative activity factor of 1.74 or 2.13 and the l-tocopheryl acetate has an activity of 0.51 compared with a dl-tocopheryl acetate with an optically uniform side chain. Moreover

the degree of activity of the tocopherols appears to be determined by the spatial structure on the asymmetric centers of the phytol side chain as well as by the free or acetylated form of the hydroxyl group on the chroman ring. Since the hemolysis test can be influenced by the antioxidant BHT, its specificity for vitamin E must be doubted. The results are discussed in relation to previously published data. (Author)

Cerkovnikov, E. and Stern, P.
CHEMICAL CONSTITUTION AND ANTIHISTAMINIC ACTION. [PT.] I. N- AND NN'-SUBSTITUTED DERIVATIVES OF PIPERAZINE. [1963] 6p 19refs
Order from SLA $1.10 63-18555

Partial trans. (p. 12-15) of [Croatica Chemica Acta] (Yugoslavia) [1946] v. 18 [p. 12-36].

DESCRIPTORS: Chemical analysis, *Antihistaminics, Allergy, Drugs.

Croccel, L., Ampe, J., and Henninot, E.
ESCHERICHIA DISPAR SEPTICEMIA WITH MYOCARDIAL AND PERICARDIAL LOCALIZATION CURE WITH COLIMYCIN (Septicémie à Escherichia Dispar avec Localisation Myocardique et Péricardique Guérison par la Colimycine). [1963] 6p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-18489

Trans. of J[ournal des] Sci[ences] Méd[icales de] Lille (France) 1961, v. 79 [no. 7] p. 288-293.

DESCRIPTORS: *Escherichia, Infections, Drugs, *Pericardium, *Colimycin

A case history.

Delnon, I. and Schweizer, E.
THE EFFECT OF COLIMYCIN IN THE CLINIC AND IN THE LABORATORY (L'Action de la Colimycine en Clinique et en Laboratoire). [1963] 9p. 7 refs.
Order from SLA $1.10 63-18488

Trans. of Therap[eutische] Umschau [und Medizinische Bibliographie] (Switzerland) 1962, v. 19, p. 571-575.

DESCRIPTORS: *Colimycin, Antibiotics, Drugs, Gastrointestinal system, Infections, Urinary system

A new antibiotic extracted from culture filtrates of B. colistinus, Colimycin is distinguised by a practically total absence of toxicity and an almost specific activity against E. coli, while very often maintaining a satisfactory and indeed sometimes excellent activity against many other microorganisms, which appears from a reading of various communications already published on the subject of this antibiotic and from an examination of 197 cultures made at the bacteriology laboratory of the Bern Maternity Hospital. Poorly resorbed by the digestive tract, this drug is of value per os only for intestinal affections: enteritis and colitis of various origins. All affections localized outside the digestive tract should be treated by the parenteral route (I. M.) at doses (in adults) of from 2 to 4 million units per day for 5 to 8 days. Various clinical cases demonstrated the especially favorable effect exerted by this drug on infections of the urinary tract while showing that other affections (furuncles, fistulas, pulmonary foci) are often successfully treated. (Author)

Derot, M., Goury-Laffont, M., and Albouy [M.].
COLIMYCIN IN RENAL PATHOLOGY (La Colimycine en Pathologie Renale). [1963] 15p. 9 refs.
Order from SLA $1.60 63-18491

Trans. of Gazette Médicale de France, 1961, v. 68, p. 1169-1180.

DESCRIPTORS: *Colimycin, *Kidneys, Diseases, Drugs, Antibiotics, Infections

A series of 22 case histories.

Durocher, G.
THE PREPARATION OF CHLORAL. [1963] 4p (figs omitted)
Order from SLA $1.10 63-18939

Trans. of la Nature [Paris] (France) 1926, v. 54i, no. 2705, p. 81-83.

DESCRIPTORS: Drugs, *Hypnotics and sedatives, *Acetaldehydes, *Chlorides, Preparation, Industrial production

Dvoryakovskii, V. A.
USSR TECHNICAL AID ABROAD IN DEVELOPING MEDICAL INDUSTRIES. 11 Oct 63, 3p JPRS: 21425.
Order from OTS $0.50 63-31930

Trans. of Meditsinskaya Promyshlennost' SSSR, 1963, v. 17, no. 8, p. 3-5.

DESCRIPTORS: *Medicine, *Drugs, Economics, Foreign policy, Industrial production

Guggenheim, M.
PHARMACOLOGICAL BEHAVIOR OF THE ALKYL AMINES. [1963] 6p
Order from SLA $1.10 63-20258

Trans. of mono. Die Biogenen Amine und Ihre Bedeutung für die Physiologie und Pathologie des Pflanzlichen und Tierischen Stoffwechsels, 2d ed, Berlin, 1924, p. 42.

DESCRIPTORS: *Alkyl radicals, *Amines, Drugs, *Sympathomimetic agents, *Curare alkaloids

Halpern, B. N., Drudi-Baracco, C., and Bessirard, D.
DEMONSTRATION OF "GROUP TOXICITY" OF CERTAIN MONOAMINE OXIDASE INHIBITORS COMPARISON OF THEIR MODE OF ACTION WITH THAT OF AMPHETAMINE (Mise en Évidence de la "Toxicité de Groupe" de Certains Inhibiteurs de la Monoamine-oxydase. Comparaison de Leur Mode d'Action avec Celui de l'Amphétamine). [Apr 63] 11p. 3 refs.
Order from SLA $1.60 63-18746

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances (France) 1962, v. 156, 20 Nov, p. 1238-1245.

DESCRIPTORS: Toxicity, Antioxidants, Inhibition, *Oxidoreductases, Drugs, *Amphetamines, Hydrazine derivatives.

Herrmann, K.
THE TANNIN OF MELISSA LEAVES (Über den Gerbstoff der Melissenblätter). [1963] [10p] 13refs
Order from SLA $1.10 63-20283

Trans. of Archiv der Pharmazie (West Germany 1954, v. 287, p. 142-147.

DESCRIPTORS: *Tannic acids, Plants (Botany), Biological assay, Drugs.

Kataja, E. and Staehelin, M.
HORMONAL REGULATION OF PROTEIN SYNTHESIS (Hormonale Regulationen der Eiweissynthese). [May 63] 4p. 5 refs.
Order from SLA $1.10 63-18745

Trans. of Helvet[ica] Physiol[ogica et Pharmacologica] Acta (Switzerland) 1962, v. 20, no. 4, p. C64-C66.

DESCRIPTORS: *Hormones, *Proteins, *Biosynthesis, Tracer studies, Cells (Biology), Drugs.

Kaverina, N. V.
THE EFFECT OF DRUGS ON REFLEX REACTIONS OF THE CORONARY VESSELS CAUSED BY STIMULATION OF THE CARDIAC RECEPTORS. [1963] [19]p. FASEB manuscript no. S 203-3.
Order from OTS or SLA $1.60 63-23831

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 1, p. 10-17.
Another trans. is available from OTS $2.75 in 63-21331, JPRS-18152, 18 Mar 63 [142]p.

DESCRIPTORS: Drugs, Reflexes, *Blood vessels, *Heart, Stimulation, *Chemoreceptors, Autonomic agents, *Vasoactive agents

Among the pharmacological methods of improving the blood supply to the heart, an important role may be played by the use of drugs capable of influencing the nervous regulation of the tone of the coronary vessels. Substances affecting the efferent innervation of the heart (for example, ganglion-blocking agents) do not always lead to an improvement in its blood supply, for besides blocking the vasoconstrictor impulses spreading to the coronary vessels, they also cause marked changes in the hemodynamics of the body. More effective in this respect are substances with a central action (analgesics, nitrites, iprazid), which, since they cause no great changes in the basic vasomotor tone of the vessels, abolish reflex vasoconstrictor influences. Finally, there is a third pharmacological means of influencing reflex, to which too little attention has still been paid - by blocking them in their afferent link. An example of this method is the use of tripindol, by means of which a selective depression can be obtained of the reflexes from the receptors sensitive only to chemical stimulation. These properties of tipindol may be particularly important for its use in disorders of the coronary circulation, when metabolic products accumulating in the myocardium, bring about a further aggravation of the conditions of its blood supply. (Author)

Klyueva, N. G. and Roskin, G. I.
THE ANTIBIOTIC CRUZIN AND THE MECHANISM OF ITS ACTION ON CANCER CELLS. 4 Oct 63, 46p 64refs JPRS: 21324.
Order from OTS $1.50 63-31882

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963 [v. 28] no. 3, p. 366-389.

DESCRIPTORS: *Cancer, *Antibiotics, *Tumors, Cells (Biology), Metabolism inhibitors.

Cancer cells, which have undergone intense morphological, cytochemical, and biochemical changes under the effect of cruzin, enter new relationships with the organism's cellular and humoral defense forces. The new relationship established between the tumor and the organism is clearly reflected by the change in the histological picture; an intense reaction of the surrounding connective tissue is observed, as well as proliferation of its elements within the tumor, and formation of broad fields of fibroblastic tissue; an intense macrophage reaction is observed in certain cases. Apparently, under the effect of humoral defense factors, a lysis of cancer cells, which were no longer viable, takes place. Thus, vast sections of dissolved homogeneous cancer tissue are formed and gradually replaced by connective cicatrical tissue. Thus, due to the effect of the antibiotic cruzin, from aggressive cells, capable of growing and multiplying rapidly, invading the surrounding normal tissue and destroying it, the malignant cells themselves become the object of aggression on the part of the organism's defense cells and humoral factors. The most important distinction in the reaction of cancer cells to cruzin consists in the fact that it begins not immediately, but very gradually after a prolonged effect over many days. (Author)

Kostygov, N. M.
PHARMACOLOGICAL PROPERTIES OF OCTATENZINE-2(1'-AZACYCLOCTYL)-ETHYL-GUANIDINE SULFATE. May 63, 13p. 15 refs.
Order from OTS or SLA $1.60 63-18768

Trans. of Farmakol[ogiya i] Toksikol[ogiya] (USSR) 1963, v. 26, no. 1, p. 28-35.

DESCRIPTORS: *Guanethidine, *Hypertension, *Hypotension, Blood pressure, *Cardioactive agents, Toxicity, Laboratory animals.

The work is devoted to the study of general and cardiovascular effects, as well as toxicity of 2 (1 -azacycloctyl)-ethyl-guanidine octatenzine sulfate in acute and chronic experiments. In acute experiments staged on cats and rabbits (urethanized and decerebrated) an intravenous injection of octatenzine in doses ranging from 5 to 15 mg/kg. results in bi-phasic hypotension (50 per cent of the initial arterial pressure level). The first hypotensive phase is of short duration

and should, evidently, be ascribed to a short-lived gangliolytic effect of the preparation. The second, longer one, is produced either through a depressed mediator output by adrenoreactive biochemical systems or by its conversion into an inactive form. The preparation demonstrated high hypotensive efficiency in chronic experiments on rabbits with experimental hypertension, provoked by long-term intravenous pituitrin injections. Judging by observations made in chronic experimentations on rabbits and rats octatenzine does not provoke any deviations either in the behavior and condition of the animals, or in the morphological structure of their organs. (Author)

Lewin, Louis.
ORTHO-SULFAMIDE-BENZOIC ACID ANHYDRIDE: ORTHO-BENZOIC ACID SULFIMIDE ($C_6H_4.COSO_2.NH$) [1963] 1p 7refs
Order from SLA $1.10 63-20104

Trans. from mono. Gifte und Vergiftungen (Poisons and Poisonings) 4 ed., Berlin, 1929, p. 554.

DESCRIPTORS: Sugar acids, Drugs, Toxicity, Tolerances (Physiology), *Sulfimides, Benzoic acids.

Maimind, S. I.
THE PROBLEM OF DETERMINING THE VOLUME OF PRODUCTION FOR NEW MEDICATIONS. 4 Oct 63, 4p JPRS: 21336.
Order from OTS $0.50 63-31887

Trans. of Meditsinskaya Promyshlennost' SSSR, 1963, v. 17, no. 7, p. 31-33.

DESCRIPTORS: *Drugs, Medicine, Production, Pharmacology.

Maus, H. and Loennecken, S. J.
CEREBRAL ANGIOGRAPHY AND ANESTHESIA (Zerebrale Angiographie und Narkose). [1963] 10p
Order from SLA $1.10 63-20227

Trans. of Fortschritte der Neurol[ogie und] Psych[iatrie] und Ihrer Grenzgab[iete] (West Germany) 1962, v. 30, Mar, p. 155-165.

DESCRIPTORS: *Angiography, Blood vessels, *Brain, *Anesthesia, Drugs, *Pentothal sodium, Anesthestics

After a 6 year experience with more than 3000 angiographies performed under thiopental anesthesia and critical study of 1000 histories representing 1308 angiographies the advantages of the procedure are shown. The avoidance of grave cerebral complications and unwelcome reflex movements, of pressure on the brain stem and venous blockage, the achievement of a stable blood pressure and technically better pictures, the sparring of psychic stress to the patient all are in favor for general anesthesia for angiography. The better filling and visualization effect of general anesthesia is a significant improvement. A scheme for the dosage of premedication and thiopental makes the performance easier for babies and infants. (Author)

Moiseev, E. A., Shurygin, D. Ya. and others.
THE EFFECT OF CYTOSTATIC SUBSTANCES ON THE ORGANS OF INTERNAL SECRETION. [1963] [12]p. 11 refs. FASEB manuscript no. S 91-3.
Order from OTS or SLA $1.60 63-23843
Figs. available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 11, p. 57-63.

DESCRIPTORS: *Endocrine glands, Drugs, *Myleran, Leukemia, Toxicity, *Tolerances (Physiology), Cells (Biology), *Antineoplastic agents

The character of the morphological changes in the endocrine glands, and their severity depend on the type of cytostatic substance, its dose and the duration of its action, and also on the individual peculiarities of the organism. After the brief administration of therapeutic doses of cytostatic substances, moderate changes were observed in the histological structure of the endocrine glands characterizing a hyper- or hypofunctional state. The administration of large doses of these preparations causes marked histological changes, characteristic of the functional insufficiency of the glands of internal secretion. (Author)

Opitz, K.
REDUCTION OF THE HYPOGLYCEMIC EFFECT OF ANTIDIABETIC SUBSTANCES BY RESERPINE (Abschwächung der Blutzuckersenkenden Wirkung Antidiabetischer Substanzen durch Reserpin). [Apr 63] 3p. 7 refs.
Order from SLA $1.10 63-18744

Trans. of Klin[ische] W[ochen]schrift (West Germany) 1962, v. 40 [no. 1] p. 56-57.

DESCRIPTORS: *Hypoglycemia, Drugs, *Diabetes, *Reserpine, Toxicity.

Paulus, W., Janitzki, U., and Hoch, W.
DETECTION OF DIFFERENT ADDICTIVE DRUGS BY MEANS OF ROUND FILTER CHROMATOGRAPHY (Der Nachweis Verschiedener Suchtmittel mit der Rundfilterchromatographie). [June 63] 6p. 1 ref.
Order from SLA $1.10 63-18802

Trans. of Arzneimittel-Forschung (West Germany) 1962, v. 12, no. 11, p. 1086-1087.

DESCRIPTORS: Drugs, *Addiction, Toxicity, Identification, Filters (Fluid), *Chromatographic analysis

A description is given of the method of round filter chromatography. A separation procedure for 20 different habit-forming drugs with 5 solvent systems was devised. Separation is made possible even in substances extracted from the urine. (Author)

Sato, Kocho.
STUDIES ON ORGAN HYDROLYSATES. V. PHARMACOLOGY OF BRAIN HYDROLYSATES. 2. EFFECTS OF BRAIN HYDROLYSATES ON EXPERIMENTAL ALLERGIC ENCEPHALOMYELITIS IN GUINEA PIGS. [1963] 4p. (tables omitted) 17 refs.
Order from SLA $1.10 63-18468

Trans. of [Nihon Yakurigaku Zasshi] (Japan) 1957, v. 53, p. 1023-1028.

DESCRIPTORS: *Brain, Tissues (Biology), *Tissue extracts, Hydrolysis, Antigen-antibody reactions, *Encephalitis, *Allergy

Experimental allergic encephalomyelitis (EAE) was produced in the guinea pig by injection of brain emulsion and adjuvants. The development of EAE in guinea pigs markedly prevented both clinically and histopathologically by giving the test material (brain hydrolysate) to the animals. The therapeutic significance of this test material is due to a certain protective effect on the central nervous system. (Author)

Schaaf, Fritz and Gross, Franz.
ANIMAL EXPERIMENTS FOR THE STUDY OF OINTMENTS AND OINTMENT BASES. [1963] 32p. (figs. omitted) 16 refs.
Order from SLA $3.60 63-18479

Trans. of Dermatologica (Switzerland) 1953, v. 106, no. 6, p. 357-378.

DESCRIPTORS: Laboratory animals, *Ointments, *Skin, *Tolerances (Physiology), Fatty acids, Biological assay, Toxicity.

Certain solvents, ointment constituents, and ointments produce medium to very marked thickening of the guinea-pig epidermis upon repeated local application, while others lack this characteristic. Depending on concentration or chemical properties, individual substances additionally provoke special irritant effects. Although there can be some parallelism between epidermal thickening and other (toxic) effects, this is not an essential feature. It is pointed out that saturated fatty acids of medium chain length (C_6-C_{14}) and unsaturated fatty acids are particularly active in provoking epidermal thickening. Consideration of this special behaviour may be of service in the selection of raw materials for the preparation of ointments. The experimental findings are in such agreement with clinical experience as regards tolerance of the raw materials and raw-material mixtures investigated that the method developed -- employing systematic guinea-pig testing -- is considered suitable for more extensive investigation of skin reactions to the raw materials used in ointment manufacture. (Author)

Schenck, G. and Brieskorn, C. H.
STUDIES ABOUT THE CONTENTS OF MELISSA (Untersuchungen über die Inhaltsstoffe der Melisse). [1963] [14p] 22refs
Order from SLA $1.60 63-20264

Trans. of Arch[iv der] Pharm[azie] (Germany) 1944, v. 282, p. 1-9.

DESCRIPTORS: Chemical analysis, Plants (Botany) *Tannic acids, *Succinic acids, Biological assay, Drugs.

It was confirmed that melissa contains etheric oil, tannin and bitter-principle. Glycosides and saponin could not be found. From the bitter tasting extracts a crystalline bitter principle was isolated for the first time. Also, succinic acid was isolated for the first time. From the petroleumether a wax, and from the ether extract a white substance which needs further analysis were isolated. Because the two last substances are not water soluble, they probably are therapeutically insignificant. (Author)

Schmidt, Paul, Seiser [A] and Litzner [S].
THE DIAGNOSTIC VALUE OF BASOPHILIC GRANULATION. [1963] 4p 24refs
Order from SLA $1.10 63-20109

Trans. of mono. [Bleivergiftung] (Lead Poisoning) [Berlin/Vienna] 1930, p. 57-59.

DESCRIPTORS: *Metal poisoning, *Lead, Toxicity, Diagnosis, *Erythrocytes.

Schmidt, P[aul] Seiser [A.] and Litzner [S.].
SOURCES OF LEAD POISONING. [1963] 3p
Order from SLA $1.10 63-20105

Trans. of mono. [Bleivergiftung (Lead Poisoning) Berlin/Vienna] 1930, sect. A, p. 11-13.

DESCRIPTORS: *Metal poisoning, *Lead, Toxicity, Sources.

Shakhbazyan, G. K. and Savitskii, I. V.
THE COMBINED EFFECT OF SULFHYDRYL POISONS AND HIGH AIR TEMPERATURE ON THE ORGANISM. [1963] [15]p. FASEB manuscript no. S150-3.
Order from OTS or SLA $1.60 63-23838

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 2, p. 38-42.
Another trans. is available from OTS $2.75 in 63-21698, JPRS-18942, 29 Apr 63, 140p.

DESCRIPTORS: *Thiols, *Poisoning, *Temperature, Atmosphere, Toxicity, Industrial medicine.

Sollero, L. and Moura, R[oberto] Soares de.
CARDIOVASCULAR ACTIONS OF GUANETHIDINE (Acoes Cardio-Vasculares do Sulfato de 2-(Octahidro-1-Azocinil) Etil Guanidina (Guanetidina). [July 63] 16p. 6 refs.
Order from SLA $1.60 63-18731

Trans. of O Hospital (Brazil) 1960, v. 58 [no. 1] p. 11-22.

DESCRIPTORS: Drugs, *Cardiovascular system, *Guanethidine, *Autonomic agents, Hypertension

The injection of guanethidine in a dose of 10-20 mg/Kg. i.v., in normal dogs, exerts a triple effect on blood pressure: (a) immediate hypotension followed by (b) gradual increase of the pressure which exceeds the normal limits of 50 to 60 mm. Hg and lasts for 45-90 minutes and which, after reaching a constant level, falls gradually to establish itself at a lower level than the original level. The hypertension is a peripheral one and is due to the liberation of adrenergic neurohormone. Guanethidine prevents the hypotension due to

central excitation of the vagus, by compression of the common carotids and electric stimulation of the splanchnicus. Guanethidine prevents the pressor responses produced by peripheral excitation of the vagus but does not interfere with the depressor responses of acetylcholine. Guanethidine sensitizes the pressor effects of epinephrine and norepinephrine. Guanethidine prevents the contraction produced by nicotine and by DMPP in the smooth muscles of the rabbit intestine, without interfering with the responses to serotonin and acetylcholine. Guanethidine produces a prolonged contraction of the nictitating membrane of cats which is not blocked by hexamethonium, but is blocked by Regitine. (Author)

Soru, E., Szabados, J. and others.
OXIDATIVE PHOSPHORYLATION IN MYCOBACTERIUM TUBERCULOSIS BCG AND ITS VARIANTS RESISTANT TO STREPTOMYCIN, PAS AND INH (La Phosphorylation Oxydative chez le Mycobacterium Tuberculosis BCG et ses Variantes Résistantes à la Streptomycine, au PAS et a l'INH). [June 63] 3p 4refs
Order from SLA $1.10 63-18925

Trans. of [die] Naturwissenschaften (West Germany) 1962, v. 49, no. 19, p. 454-455.

DESCRIPTORS: *Phosphorylation, *Tuberculosis, *Tolerances (Physiology), Drugs, *Antitubercular agents, Streptomycins, Aminosalicylic acid, Isoniazid.

Oxidative phosphorylation (the malate as substrate) in Mycobacterium tuberculosis BCG was demonstrated, as well as in its variants resistant to streptomycin, PAS and INH. Resistance to the antibiotics mentioned is accompanied by a partial uncoupling of oxidative phosphorylation by using the malate as substrate. The P/O ratio is 3.0 in the original sensitive strain, P/O = 2.4 in the streptomycin-resistant variant (1000 μg./ml.); P/O = 1.2 in the PAS-resistant variant (500 μg./ml.); P/O = 2.0 in the INH-resistant variant (250 μg./ml.). (Author)

Stawitz, J.
THE WATERSOLUBLE CELLULOSE ETHERS IN PHARMACY AND MEDICINE, COMMUNICATION 1. [1963] 8p (formulae refs omitted)
Order from SLA $1.10 63-18559

Trans. of [die] Pharmazeutische Industrie (West Germany) 1950, v. 12, p. 39-44.

DESCRIPTORS: *Cellulose ethers, *Methyl cellulose, Glycols, Drugs, Medicine, Solubility, Stability, Physiology, Chemical properties, Colloids.

The applications of watersoluble cellulose ethers in pharmacy and medicine are reported to an extent already known in the literature. Further application possibilities are mentioned. A description of the chemical and colloidal properties of these interesting and versatile expedients, not yet completely given in the literature, is given in order to facilitate the operations with them. (Author)

Tavrovskii, V. M.
EXPERIENCE IN THE USE OF POLYVINOL FOR THORACIC SURGERY. 13 Sep 63, 8p 8refs
JPRS: 21089.
Order from OTS $0.50 63-31765

Trans. of Vestnik Khirurgii (USSR) 1963, v. 90, no. 6, p. 14-18.

DESCRIPTORS: *Polyvinyl alcohol, Surgery, *Plasma substitutes, *Thorax, Drugs.

Veyrat, R., Fabre, J., and Müller, A.-F.
SELECTIVE INHIBITION OF ALDOSTERONE SECRETION BY A SEMISYNTHETIC HEPARINOID (RO 1 8307) (Inhibition Sélective de la Secretion del'Aldostérone par un Héparinoide Semi-Synthétique (Ro 1 8307)). [May 63] [9]p. 2 refs.
Order from SLA $1.10 63-18798

Trans. of Helv[etica] Med[ica] Acta (Switzerland) 1962, v. 29, Dec, p. 543-549.

DESCRIPTORS: Inhibition, *Aldosterone, Secretion, *Diuretics, Urine, Corticosteroid agents, *Heparin, Drugs.

In normal persons under physiological conditions accompanied by hyperaldosteronism, the heparinoid Ro 1 8307 lowers urinary aldosterone excretion without influencing that of the 17-hydroxycorticosteroids, determined quantitatively by Norymberski's method. It therefore behaves apparently like a selective inhibitor of aldosterone secretion. (Author)

Radiobiology

STUDIES IN NUTRITION. 20 Sep 63, 31p 34refs
JPRS: 21171.
Order from OTS $1.00 63-31803

Trans. of Voprosy Pitaniya (USSR) 1963, v. 22, no. 4, p. 3-24.

DESCRIPTORS: *Nutrition, Food, Radioactivity, *Phosphatases, *Radiation effects, Gastrointestinal system, X-rays, *Vitamin B complex, Metabolism, *Lipases.

Contents:
The tasks of the science of nutrition in the light of the decree of the CC CPSU and Council of Ministers USSR "concerning measures for the further development of biological science and strengthening its connection with practice"
Can a determination of the total beta-radioactivity of food products suffice, by A. A. Moiseev
Histochemical studies of lipase, alkaline and acid phosphatase activities in the digestive tracts of rats on different diets exposed to sublethal doses of X-rays, by T. Tashev and Z. Angelova
The effect of X-ray irradiation on riboflavin metabolism, by M. M. Kubareva.

Afrikanova, L. A.
SKIN REPAIR AFTER ACUTE RADIATION NECROSIS. [1963] [11]p. 9 refs. FASEB manuscript no. S 90-3.
Order from OTS or SLA $1.60 63-23844

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 11, p. 42-46.

DESCRIPTORS: *Skin, Wounds and injuries, *Radiation sickness, *Necrosis, Radiation effects, *Healing.

The development of a focus of radiation necrosis is characterized by a slow tempo, the absence of a clear cut picture of inflammation, and the development of necrotic changes in the zone of injury. At the time of formation of a focus of radiation necrosis, ready-formed layer of proliferating epidermis and young connective tissue are present at its edges and base. A special feature of the scar formed at the site of radiation necrosis is delay in the differentiation of newly formed structure. (Author)

Amosov, I. S.
CHANGES IN THE PULMONARY VESSELS IN CHRONIC RADIATION SICKNESS. [1963] [13]p 14 refs FASEB manuscript no. S423-2.
Order from OTS or SLA $1.60 63-23887

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 4, p. 57-64.

DESCRIPTORS: Blood vessels, *Lungs, *Radiation sickness, Radiation effects, Blood circulation.

In chronic radiation sickness functional and anatomical changes arise in the blood vessels of the lungs, corresponding in their development to the general course of the disease. These disturbances, marked during exacerbations and subsiding to some extent during remissions, may be revealed by angiocardiography. In the initial period of the disease, as a result of the dystonia manifested by constriction of the large and dilatation of the small vessels, areas of slowing of the circulation (hypostasis) are formed and the movement of the contrast medium along the lung vessels is accelerated. During an exacerbation of the disease, the small or lobar arteries may become occluded. The blood flow in the lung vessels is accelerated on account of dilatation of the arterio-venous anastomoses. In the later stages the pulmonary arteries are increasingly constricted, the network of small vessels becomes sparse, and emphysema and radiational fibrosis of the lungs develop. In periods of remission, signs of vascular circulatory dystonia are absent or very slight but the unusual flow of contrast medium from the arteries into the pulmonary veins is preserved, avoiding the phase of capillary filling. Recanalization of the occluded pulmonary arteries may take place in the surviving animals. (Author)

Andreev, S. V., Molchanova, V. A. and others.
THE USE OF RADIOACTIVE ISOTOPES FOR TAGGING THE STINKBUG EURYGASTER INTEGRICEPS PUT. (HEMIPTERA, PENTATOMIDAE). 10 Sep 63, 16p. 21 refs. JPRS: 20987.
Order from OTS $0.50 63-31708

Trans. of #Entomologicheskoe Obozrenie (USSR) 1963, v. 42, no. 1, p. 39-48.

DESCRIPTORS: Radioactive isotopes, *Hemiptera, *Tracer studies, Insects, *Pest control.

The method of studying migrations of mass insects worked out by the Laboratory of Biophysics of the All-Union Institute of Plant Protection was checked on the stinkbug whose biology is comparatively well known. In addition, the utilization of the essential advantages of the method worked out made it possible for the first time to use this method in the study of agricultural objects and to obtain a number of new data on the nature of migration of the stinkbug in the larval and adult phases of development, for example, vertical and horizontal migrations of the larvae of different ages depending on climatic conditions, seasonal migrations of the adult bugs, and determination of the habitats of the stinkbug in the forest and places where they went to spend the winter under conditions of Vorontsovo, Aleksandrovskiy Rayon, in Stavropol'skiy Kray. At the same time, the check of this method which was made on this object proves the possibility of using it for the study and detailing of the biology of a number of mass pests, such as the beet pest, grain moth, locusts and others. The main advantage of this method, as tests of it showed, is the possibility of making observations of considerable numbers of insects. This makes it possible, by using the law of large numbers, to obtain more accurate data and reliable results. (Author)

Deryabina, V. M., Kagan, M. S. and others.
PHYSIOLOGICAL AND DOSIMETRIC INVESTIGATIONS OF THE EFFECT OF RADON WATER, GIVEN INTERNALLY, ON THE GASTRIC SECRETORY FUNCTION. [1963] [11]p. 7 refs. FASEB manuscript no. S419-2.
Order from OTS or SLA $1.60 63-23888

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 3, p. 39-45.

DESCRIPTORS: *Radiation effects, *Radiological dosage, *Secretion, Stomach, *Radon, Stimulation, Water, Physiology.

The integral absorbed dose of radiation obtained by three dogs after a single introduction of radon water into the stomach in a dose of 250 ml with a radon concentration of 5000 Mache units (1.8 μCi/liter), followed by taking food, averaged 18.7 g-rad. Important factors in the physiological effect of radon water on the secretory function of the stomach are the conditions of administration of the water and the integral absorbed dose of radiation. When given once or three times in the course of 24 hr, radon water (18.7 and 56.1 g-rad) caused no appreciable changes in gastric secretion, and its action was indistinguishable from that of tap water. A course of injections of radon water (total dose 1047 g-rad for the course) stimulated the gastric secretion (compared with the action of tap water) and its after effect was prolonged. (Author)

Kuznetsova, N. N.
TESTIS INJURY IN MATURE MICE AS A RESULT OF SINGLE AND FRACTIONAL IRRADIATION DURING THE PERIOD OF EMBRYONIC DEVELOPMENT.
6 Sep 63, 6p. 9 refs. JPRS: 20960.
Order from OTS $0.50 63-31697

Trans. of Zhurnal Obshchei Biologii (USSR) 1963, v. 24, no. 3, p. 221-225.

DESCRIPTORS: *Sex glands, *Radiation injuries, *Radiation effects, *Embryos, Mice, X-rays.

It is shown that with fractional irradiation of the testis during the critical period of embryonic development the injuries are summated. The results are indicative of the danger of repeated penetrating radiation (roentgenoscopy and fluoroscopy) procedures for human embryos. (Author)

Moskalev, Yu. I.
ESTABLISHMENT OF THE MAXIMAL PERIMISSIBLE CONCENTRATION OF RADIOACTIVE ISOTOPES IN THE BODY AND THEIR MAXIMAL PERMISSIBLE DAILY INTAKE: DISCUSSIONS. [1963] [20]p. 3 refs.
FASEB manuscript no. S 452-2.
Order from OTS or SLA $1.60 63-23882

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 8, p. 91-97.

DESCRIPTORS: *Radiological dosage, Life span, Radioactive isotopes, *Tolerances (Physiology), Ionization, *Absorption (Biological), Physiology

Possible experimental methods of determining the maximal permissible levels of intake of radioactive isotopes into the human body were examined, using as criteria the life span and the action of radioactive isotopes in producing osteogenic sarcoma and leukemia. (Author)

Piontkovskii, I. A. and Airapetyants, M. G.
ON CERTAIN CHARACTERISTICS OF HIGHER NERVOUS FUNCTIONS IN ANIMALS ANTENATALLY IRRADIATED WITH IONIZING RADIATION. REPT. 5. CHARACTERISTICS OF HIGHERNERVOUS FUNCTIONS IN EARLY POSTNATAL ONTOGENESIS IN PUPPIES IRRADIATED IN THE·PERIOD OF EMBRYONIC DEVELOPMENT. 20 Aug 63, 8p. 4 refs. JPRS: 20731.
Order from OTS $0.50 63-31582

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1963, v. 55, no. 1, p. 26-30.

DESCRIPTORS: *Radiation effects, *Embryos, Ionization, Brain, *Nervous system, Cerebral cortex, X-rays, *Anomalies, Dogs.

Conditioned reflex activity was studied during the period of early postnatal ontogenesis by the olfactory and shaking methods in dogs irradiated with X-rays on the 45th and the 20th day of embryogenesis in a dose of 200 r. There were 38 puppies under observation: 15 control, 9 irradiated on the 20th day and 14 on the 45th day of embryogenesis. The puppies of experimental litters developed very unevenly (as compared to control) both in somatic respect and in respect to the higher nervous activity. At the age of 2 months the difference in weight between various experimental puppies constituted about 150%, whereas in control animals it did not exceed 10-15%. The connective function of the cerebral cortex in the experimental puppies was deranged right from their birth and up to the age of 6 months. Conditioned reflexes and especially differentiation in the experimental puppies appear at a later date. Frequent occurrence of phasic conditions (paradoxic, ultraparadoxic) in experimental animals points to the functional deficiency of cortical cells. In puppies irradiated on the 20th day of embryogenesis the neurodynamic disturbances and especially the processes of cortical inhibition were seen to be more marked than in those irradiated on the 45th day. (Author)

Shabadash, A. L., Grafova, G. Ya. and others.
CYTOCHEMICAL STUDIES OF GLYCOGEN IN THE CENTRAL NERVOUS SYSTEM OF THE FROG AFTER GAMMA-IRRADIATION [AND] REACTIVE CHANGES IN THE EPIDERMIS AFTER THERMAL INJURY.
20 Sep 63, 30p. 66 refs. JPRS: 21170.
Order from OTS $1.00 63-31802

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1963, v. 44, no. 5, p. 26-36, 96-105.

DESCRIPTORS: *Cytochemistry, *Glycogen, Brain, Spinal cord, Nervous system, *Amphibians, Gamma rays, Skin, *Burns, *Radiation effects.

Surgery

Darbinyan, T. M. and Chernyakhovskii, F. R.
ANESTHESIA FOR OPERATIONS AND PAINFUL CHANGES OF DRESSINGS. 12 Sep 63, 11p. 6 refs.
JPRS: 21069.
Order from OTS $0.50 63-31757

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1963 [v. 8] no. 3, p. 77-82.

DESCRIPTORS: Anesthesia, Surgery, *Anesthetics, *Surgical dressings, *Burns, Drugs.

The most effective combination in anaesthesia in cases of burnt patients is Shane--Ashman's mixture, trylene with oxygen, trylene with nitrous oxide, fluothane with oxygen. Fluothane permits to give long-range anaesthesia with well-controlled arterial hypotension, especially in cases where a special evaporator--"Fluoteck" is available. (Author)

Dobrova, N. B., Bykova, N. A. and others.
VASCULAR ALLOPLASTY. 12 Sep 63, 8p. 5 refs.
JPRS: 21070.
Order from OTS $0.50 63-31758

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1963 [v. 8] no. 3, p. 41-44.

DESCRIPTORS: *Blood vessels, *Prosthetics, Amides, Ethylenes, Fluorides, *Plastic surgery.

Three groups of synthetic vascular prostheses were

studied: made from polyamide, polyether and polytetrafluorethylene fibres. Each material was considered according to the functional condition of the prothesis at various intervals after implantation, the loss of the elasticity during implantation and also on the strength of histological examinations. 150 experiments of plastics of the thoracic aorta in dogs were carried out. Data, received after study of the prostheses according to the above methods, showed that the degree of chemical inertness of the material from which the prosthesis is made determined its fate in the body. (Author)

Halter, G.
ABDOMINAL OR VAGINAL HYSTERECTOMY FOR THE CORPUS-Ca (Abdominale oder Vaginale Operation des Korpuskarzinoms). [1963] 5p [refs omitted]
Order from SLA $1.10 63-20221

Trans. of Wien[er] Med[izinische] W[o]ch[e]nschr[ift (Austria) 1961, v. 111, p. 422-424.

DESCRIPTORS: Surgery, *Uterus, *Cancer, Excision.

An isolated metastasis in the vesico-uterine ligament without involvement of the cervix and parametria from a corpus carcinoma is extremely rare. It resulted in hydronephrosis and hydro ureter. The urologic findings were an indication for an abdominal approach. (Author)

Orlov, A. M. and Kochetygov, N. I.
DIAGNOSIS AND TREATMENT OF ACUTE SURGICAL DISEASES OF THE ABDOMINAL ORGANS IN BURN PATIENTS [AND] EARLY NECRECTOMY IN EXTENSIVE BURNS. 6 Sep 63, 15p. 16 refs. JPRS: 20941.
Order from OTS $0.50 63-31682

Trans. of Vestnik Khirurgii (USSR) 1963, v. 90, no. 5, p. 83-92.

DESCRIPTORS: *Burns, *Abdomen, Excision, *Necrosis, Diseases, Diagnosis, Therapy, Surgery.

The clinical picture of acute abdomen as a complication after the burn was observed by the author in thirty patients with deep and extensive burns. The acute abdomen syndrome in burns could be the result of different pathological changes occurred in the organism of burned patients (ulcers, erosion and hemorrhage in gastrointestinal tract, inflammatory processes and stones in the biliary and urinary passages, pneumonia, abdominal purpura, etc.). It is extremely difficult to put the differential diagnosis of acute abdomen associated with burns due to the atypical symptoms and, sometimes, complete absence of separate clinical symptoms, even if there are destructive changes in the abdominal organs. Difficulties in diagnosing these complications are stipulated by fact that clinical picture of the acute abdomen is progressing on the background of severe burn disease. Surgical policy in these cases should be similar to that used in other forms of acute abdomen, i.e. if it is impossible to exclude the abdominal lesion, then tentative laparotomy is indicated. (Orlov) In experiments on 139 rabbits and cats the reasonability of an early necrectomy in extensive deep burns has been investigated. In burns resulting in the development of dry necrosis an early necrectomy is felt to be rational only with the simultaneous skin defect plasty. In burns with moist necrosis the removal of the affected tissues is rational per se. In this case the effect of necrectomy is the better the earlier it is performed. (Kochetygov)

Pogosova, A. V., Romanova, L. S. and others.
CHANGE IN THE PROTEIN FRACTIONS AND RATE OF MUSCLE PROTEIN SYNTHESIS WHEN A DEFECT IN THE MUSCLE IS REPLACED WITH FROZEN-DRIED GROUND-UP MUSCLE TISSUE AND PROTEIN PREPARATIONS. 12 Sep 63, 6p. 4 refs. JPRS: 21042.
Order from OTS $0.50 63-31741

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1963 [v. 8] no. 3, p. 74-76.

DESCRIPTORS: *Muscle proteins, Biosynthesis, Muscles, Transplantation, Regeneration, Tissues (Biology), Freeze drying, Proteins.

After removal of a piece of muscle and filling in the defect with frozen-dried ground-up muscle tissue or actomyosin a very pronounced regeneration of muscle tissue was observed with a partial restoration of the transverse striation. Thereby, in animals there is an increase in the rate of protein synthesis at the site of the transplantation and in areas directly adjacent to the operative site at all periods of the investigation (from three weeks to 9 1/2 months). The protein fractions of the regenerate and adjacent area in these animals are similar in their content to the protein fractions of normal muscle tissue. Reparative processes after the transplantation of frozen-dried ground-up muscle tissue which had been preserved for a long time (up to two years) are just as pronounced as when the muscle defect is filled in with freshly ground muscle tissue. (Author)

Zoology

SOVIET RESEARCH ON INCREASING AND UTILIZING FISH POPULATIONS. 9 Sep 63, 107p. 186 refs. JPRS: 20969.
Order from OTS $2.50 63-31702

Trans. of Voprosy Ihktiologii (USSR) 1961, v. 1, no. 4[21] p. 599-611, 616-649, 666-680, 752-761.

DESCRIPTORS: *Fishes, Dams, *Lakes, Marine biology, *Acclimatization, Reproduction, Food, Ecology, Rhythm (Biology), *Aquatic animals

Contents:
Problem of reservoir use by fisheries in various geographical zones, by A. G. Podduvnyi and M. A. Formunatov
Research problems in pond pisciculture, by F. G. Martishev
Increasing the catch of fish in marine waters, by R. S. Rass
Results of acclimatization of far-eastern fish poisonous to plants and measures for their further assimilation and study in new regions, by B. V. Verigin

Spawning population types and several problems of research into commercial fish population dynamics, by Yu. E. Lapin

Experience in cultivating Brachionus Rubens Ehrbg. rotifers as food for young fish, by G. L. Vasil'eva and G. L. Okuneva

Karzinkin, G. S.
THE USE OF RADIOACTIVE ISOTOPES IN THE FISHING INDUSTRY. 17 Sep 63, 77p. 140 refs. JPRS: 21109.
Order from OTS $2.00 63-31775

Trans. of mono. Ispol'zovanie Radioaktivnykh Izotopov v Rybnom Khozyaistve, Moscow, 1962, 73p.

DESCRIPTORS: *Radioactive isotopes, *Fishes, *Tracer studies, Metabolism, Radiobiology.

Nicolau, Aurelia and Rosca, G.
ACTIVITIES OF THE INSTITUTE FOR PISCICULTURAL RESEARCH AND PLANNING. 6 Sep 63, 10p. JPRS: 20966.
Order from OTS $0.50 63-31699

Trans. of Industria Alimentara, Produse Animale (Rumania) 1963, v. 11, no. 4, p. 111-113.

DESCRIPTORS: *Fishes, Fisheries, *Feeding, Plankton, Acclimatization, Production, Scientific organizations

Zvorikin, V. P.
MORPHOLOGICAL BASIS FOR THE ULTRASONIC AND SONIC DETECTION CHARACTERISTICS OF THE DOLPHIN. 11 Sep 63, 18p. 36 refs. JPRS: 21038.
Order from OTS $0.50 63-31738

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1963 [v. 44] no. 7, p. 3-17.

DESCRIPTORS: Hearing, Sound, Detection, *Auditory perception, *Ultrasonic radiation, Aquatic animals, *Cetacea.

A comparative cytoarchitectonic study and planimetric measuring of subcortical formations of the auditory analyzer in man and dolphin showed morphological correlations between the ability to receive ultrasounds and the system of subcortical formations of the auditory analyzer (and not of the auditory cortex). The number and dimensions of cellular elements in the system in question are from 6 to 217 times greater in dolphin than in man (in absolute values). The correlation referred to previously, becomes especially distinct in some elements of the auditory subcortex with the development of an ability to receive ultrasounds or in lack of it. It was also found that the property of hearing under study is determined not by the level of the cytoarchitectonic differentiation of the auditory subcortex but, in the first place, by its quantitative characteristic. (Author)

Zwolski, Wlodzimierz.
SIMULIIDAE OF THE LUBLIN DISTRICT (Mustyki (Simuliidae) Lubelszczyzny) tr. by A. Kossowska. 1963 [25]p. 43 refs. PL-480 Agr.
Order from OTS $0.50 61-11343

Trans. of [Uniwersytet Marii Curie-Sklodowskiej]. Annales. Sec[tio] C: [Biologia] (Poland) [1958] v. 13, no. 14, p. 231-259.

DESCRIPTORS: *Diptera, Insects, *Taxonomy.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 264 (CHEMISTRY SERIES). 9 Aug 63 7p JPRS: 20584
Order from OTS $0.50 63-31496

Abstract trans. of Revista de Chimie (Rumania) 1963, v. 14, no. 4, p. 187-228, 231-237.

DESCRIPTORS: *Abstracts, *Bibliographies, *Chemistry, Pigments, *Plastics, *Drugs, *Chemical engineering, Dyes, Isotope separation.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 279 (CHEMISTRY SERIES). 30 Aug 63, 11p. JPRS: 20850.
Order from OTS $0.50 63-31642

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Chemical reactions, Thermochemistry, Metals, *Chemical analysis, Electrochemistry, Immunology, *Rubber, Spectroscopy, Synthesis (Chemistry), Molecular structure, *Radiation chemistry, Drugs.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 314 (CHEMISTRY SERIES). 7 Oct 63, 27p JPRS: 21345.
Order from OTS $0.75 63-31892

Consists of abstracts of articles from the scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Petroleum, Petroleum industry, Alkenes, *Gasoline, *Lubricants, *Bitumens, Organic compounds, *Chemical analysis, Polymers, Physical chemistry, Sequestering agents.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 320 (CHEMISTRY SERIES). 11 Oct 63, 20p JPRS: 21421.
Order from OTS $0.75 63-31926

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia, East Germany, and Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Catalysts, *Chemical analysis, Plastics, *Electrochemistry, Crystals, Phase studies, *Thermochemistry, Molecular structure, *Spectroscopy, Chemical engineering, Polymers.

ACADEMICIAN CHEMIST ILIE G. MURGULESCU: BIOGRAPHIC DATA. 2 Oct 63, 5p JPRS: 21291.
Order from OTS $0.50 63-31867

Trans. of Institutul Politehnic, Iasi. Buletinul (Rumania) 1962, v. 8 (12) no. 1/2, p. 17-19.

DESCRIPTORS: *Chemists, *Biographies.

BULLETIN OF THE CHEMICAL SOCIETY, 1962, VOL. 27, NO. 1: [SELECTED ARTICLES]. tr. by Aleksandra Stojiljkovic. 1963, 56p 68refs PL-480 Comm
Order from OTS $0.50 62-11757/1

Trans. of [Srpsko] Hemisko Drustvo [Belgrad]. Glasnik (Yugoslavia) 1962, v. 27, no. 1, p. 5-21, 23-35, 37-49, 51-61.

DESCRIPTORS: *Chemistry, Scientific organizations, Yugoslavia, *Copper, Microanalysis, Colorimetric analysis, Sequestering agents, *Uranium, *Manganese, *Cadmium, *Cobalt, *Mercury, Fruits, *Ascorbic acid, Phosphorus compounds (Organic), *Enzymolysis, *Water supplies, Contamination

Contents:
A contribution to the complexometric determination of metals. I. The determination of copper, by T.A. Kis and V. D. Canic
The determination of micro amounts of elements by cupric ferrocyanide ring colorimetry. I. The determination of uranium, manganese, cadmium, cobalt, and mercury (mercurous and mercuris ions) by T. J. Janjic and others
Some new derivatives of isatic acid, by Dj Stefanovic and others
The chemical composition of a nitrogen-free organic substance found in walnut fruit during certain phases of the vegetation period, by J. K. Pazarincevic and A. F. Damanski
Enzymatic degradation of some organo-phosphorus compounds containing p-nitrophenyl radical in plasma and organs of various animal species, I, by Z. Binenfeld
A contribution to the investigation of self-purification of watercourses contaminated with waste waters. I. The contamination of the watercourse Nadel, by N. Radak and others

USSR SCIENTIFIC ABSTRACTS: CHEMISTRY AND METALLURGY NO. 2. 10 Sep 63, 48p. JPRS: 21005.
Order from OTS $1.50 63-31719

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Chemistry, *Metallurgy, *Abstracts, *Alkaloids, *Insecticides, *Phosphorus compounds (Organic), Metals, *Alloys, *Brazing, *Welding, *Material separation, *Patents, *Steel, *Titanium, Titanium alloys, Conferences

Contents:
I. Chemistry
Alkaloids
Insecticides
Organophosphorus compounds
Rare metals
Miscellaneous
II. Metallurgy
Alloy structure and properties
Brazing and welding
Extractive metallurgy of rare metals
Patents
Technology of steel
Titanium and its alloys
Miscellaneous
Conferences.

USSR SCIENTIFIC ABSTRACTS: CHEMISTRY AND METALLURGY NO. 3. 4 Oct 63, 32p JPRS: 21327.
Order from OTS $1.00 63-31884

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Chemistry, *Metallurgy, *Abstracts, Phosphorus compounds, Arsenic compounds, Brazing, Welding, Creep, Magnetism, Superconductivity, Oxidation, Corrosion, Patents, Rolling mills, Cladding, Titanium, Titanium alloys, Transformations, Phase studies.

Contents:
I. Chemistry
Organophosphorus and arsenic compounds
Radiation chemistry
Miscellaneous
II. Metallurgy
Brazing and welding
Long-time strength and creep
Magnetism and superconductivity
Oxidation and corrosion
Patents
Rolling and cladding
Titanium and its alloys
Transformations and phase studies
Miscellaneous.

Acero Saez, Eduardo.
THE PRESENT DAY STATE OF THE PRODUCTION OF TARTARIC ACID FROM RESIDUAL TARTARIC LEES (PT. III]. [1963] 23p (figs tables formulae some refs omitted) 4refs
Order from SLA $2.60 63-18881

Trans. of Ion (Spain) 1956, v. 16, p. 80-86.

DESCRIPTORS: *Calcium compounds, *Tartrates, Production, *Ion exchange, Manufacturing methods, Crystallization, Purification, Decomposition, Sulfuric acid, Economics, *Wines, *Wastes (Industrial).

(See also 63-18880)

Knor, Zlatko.
A CONTRIBUTION TO THE CONSTRUCTION OF VACUUM APPARATUS. [1963] 9p. 29 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R62. When supply is exhausted, order from SLA $1.10, 63-16548

Trans. of Chemicke Listy (Czechoslovakia) 1959, v. 53, p. 941-944.

DESCRIPTORS: *Vacuum apparatus, *Laboratory equipment, Meters, Pressure, Measurement, Design, Operation, Construction, Pressure gages

Topics include: New modification of the McLeod gauge; ground float cutoff; vacuum cold trap; and semi-automatic metering device.

[Takamuku] Setsuo and Hachihama, Yoshio.
LIGNIN CARBOHYDRATES ISOLATED FROM IRRADIATED WOODEN POWDER. [1963] 9p. (figs. tables omitted) 11 refs.
Order from SLA $1.10 63-18019

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 9, p. 1662-1664.
Another trans. is available from NRCC as NRCC C-4405, FPRB Trans-155, May 62 [8]p.

DESCRIPTORS: *Wood, Powders, *Radiation chemistry, *Lignin, *Carbohydrates, Separation, Chromatographic analysis, Hydrolysis, *Hemicellulose, *Saccharides, Glucose, Arabinose, Xylose, Manose, Cellulose

Powdered red pine wood was irradiated with a 1500 Curie Co^{60} source, and the Brauns native lignin and lignin-carbohydrate complex (LCC) fractions were isolated. The yield of both fractions was found greater than that of non-irradiated samples. Further irradiation of the residue yielded additional LCC. Chromatographic analysis helped clarify the nature of the union between lignin and the carbohydrate in the LCC. Acid hydrolysis of the carbohydrate showed that it is hemicellulose containing glucose (20 to 35%), arabinose, xylose, and mannose. Evidence indicated that there may be a union between lignin and cellulose.

Ueda, Ryuzo, Terajima, Takane, and Okuda, Takashi.
POLYMER COMPOSITION OF COMMERCIAL LACTIC ACID. Rept. 11 [of] Studies on the Utilization of Fermented Lactic acid. [1963] 7p 11refs
Order from SLA $1.10 63-18904

Trans. of Hakko Kogaku Zasshi (Japan) 1958, v. 36, p. 368-371.

DESCRIPTORS: *Lactic acid, *Polymers, Separation, *Chromatographic analysis, Impurities.

Partition chromatography was conducted according to R. Montogomery's method (J. Am. Chem. Soc. 74: 1466, 1952), and it was seen that the polymers in lactic acid water solution could be determined more or less completely. The polymer composition of edible grade lactic acid demonstrated 57 ~ 62% monomer, 20 ~ 23% dimer, 4 ~ 7.5% trimer, and trace ~ 7% tetramer, and total acidity was 87 ~ 93% The lactic acid polymers of industrial grade lactic acid were more by about 1.5 times than of edible grade lactic acid of the same concentration. It appeared that the quantity of polymers formed was made to increase by the presence of impurities. (Author)

Analytical Chemistry

Angelé, H. P., Bobeth, W., and Vollrath, L.
GAS CHROMATOGRAPHIC ANALYSIS OF HYDROXYL-CONTAINING COMPOUNDS WITH HIGH BOILING POINT [AND] MICROSCOPIC DETERMINATION OF THE QUALITATIVE PHASE OF POLYACRYLIC NITRILE FIBERS [Gas-chromatographische Analyse Hochsiedender Hydroxylhaltiger Verbindungen [and] Zur Mikroskopischen Erfassung des Qualitativen Zustandes von Polyacrylnitril-Faserstoffen]. [1963] 3p. (figs. omitted) 5 refs.
Order from SLA $1.10 63-18262

Trans. of Akad[emie der] Wissen[schaften] Berlin. Monatsberichte (East Germany) 1962, v. 4 [no. 11/12] p. 761-766.

DESCRIPTORS: *Alcohols, *Glycols, Separation, *Chromatographic analysis, *Fibers (Synthetic), *Acrylonitrile polymers, Microanalysis, Microscopy.

Bruhns, G.
SIMPLIFIED DETERMINATION OF HYDROSULFITE (BLANKIT, REDO). [1963] 3p
Order from SLA $1.10 63-18669

Trans. of Recueil des Travaux Chimiques des Pays-Bas (Netherlands) 1894, v. 13, p. 36.

DESCRIPTORS: *Sodium compounds, Hydrogen compounds, *Sulfites, Chemical analysis

Gassner, K. and Friedel, H.
TURBIDIMETRIC SULPHATE DETERMINATION IN PHOSPHORIC ACID AND PHOSPHATES. [1963] 7p. 16 refs.
Order from SLA $1.10 63-16256

Trans. of [Zeitschrift für Analytische Chemie (West Germany) 1956, v. 152] p. 421-424.

DESCRIPTORS: *Sulfates, *Phosphoric acids, *Phosphates, Chlorides, Gelatins, Quantitative analysis.

There is described a rapid method for determining the sulphate in technical phosphoric acid and phosphates based on measurement of the turbidity occurring after adding barium chloride. For obtaining spontaneous reproducible turbidities, the phosphoric-acid solution containing 0.40-1.60 mg SO_3/50 ml at pH 1.0-2.0 is mixed homogeneously with gelatin, barium chloride and bariumsulphate containing gelatin. Sulphate contents of 0.01-2% SO_3 in technical phosphoric acid and phosphates were determined with a precision of plus or minus 3%. (Author)

Hoffmann, Josef.
DETECTION AND QUANTITATIVE DETERMINATION OF SMALL QUANTITIES OF URANIUM IN SILICATE FORMS, INCLUDING GLASS. [1963] 25p. 15 refs.
Order from SLA $2.60 63-18129

Trans. of Sprechsaal (Germany) 1940, v. 73, 2 May, p. 153-157.

DESCRIPTORS: *Glass, *Silicates, *Uranium, Detection, Quantitative analysis, Fluorescence, Intensity

A report is given on the detection of small quantities of uranium. The method used enables the estimation of uranium quantities up to 10^{-11} and the determination of quantities from 10^{-6} to 10^{-9} directly from the fluorescence intensity. By means of dilutions that may be employed, the method also enables urnaium quantities to be determined up to and beyond the limit of the usual gravimetric determination. The Hernegger-Karlik method has the advantage of greatest accuracy. It was applied by the author to the examination of silicates, and the foregoing describes the first uranium determination according to the fluorescence method in a colored bottle glass. It was found also that the uranium-content in the amount of $1.2 \cdot 10^{-4}$ U unintentionally brought intc a bottle glass originated from a uranium-bearing sand and that carbon-dioxide solutions were able to absorb traces of uranium from the uranium-bearing bottle. (Author)

Knizakova, E. and Körbl, J.
THE "ISOTHERMAL" DECOMPOSITION PRODUCT OF SILVER PERMANGANATE AS A COMBUSTION CATALYST IN THE DETERMINATION OF CARBON AND HYDROGEN. Pt. 9 of Analytical Applications of Silver Permanganate. 19 Apr 63 [4p] 19refs
Order from SLA $1.10 63-18897

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, p. 2420-2421.

DESCRIPTORS: *Silver compounds, *Permanganates, Decomposition, *Combustion, *Catalysts, *Carbon, *Hydrogen, Chemical analysis, Halogens, Sulfur, Absorption.

Silver permanganate with an average crystal size of 1 X 1 X 3 mm, was heated in a drying oven at 90-95°C for 24 hours in layers no higher than 2-3 mm. The decomposition product formed was then ignited for 1-3 hours at 500°C, and was used directly as a combustion-tube filling in the usual way. The capacity of a 35-mm catalyst layer, weighing 2.3g, for chlorine, bromine, and sulfur was determined at an oxygen flow rate of 11-12 ml/mm. The catalyst layer in question reliably retains 120 mg of sulfur, 240 mg of chlorine, or 1083 mg of iodine. The structure of the isothermal product showed no visible change on absorption of sulfur oxides, so that even in this case the permeability of the combustion tube remains constant. (Extracted)
(See also 62-18993)

Knizek, Miroslav and Provaznik, Jan.
PROBLEMS OF BLIND TEST ANALYSIS OF TRACE ELEMENTS. [1963] 25p. 57 refs.
Order from SLA $2.60 63-18156

Trans. of Chemicke Listy (Czechoslovakia) 1961, v. 55, no. 4, p. 389-399.

DESCRIPTORS: *Impurities, *Contamination, Purification, Microanalysis, Chemicals, Semiconductors,

A survey of the literature.

Kohashi, Tomosuke.
IDENTIFICATION OF PYRIDINE BASES AND NICOTINE BASES BY GAS CHROMATOGRAPHY. Pt. 8 of Studies of Thermal Decomposition of Tobacco Alkaloids. [1963] 8p 10refs
Order from SLA $1.10 63-18934

Trans. of [Nihon Kagaku Zasshi] (Japan) 1961, v. 82, p. 1262-1265.
Another trans. is available from K-H $14.50 as K-H-12240a [1962] 12p.

DESCRIPTORS: *Tobacco, *Alkaloids, Pyrolysis, *Nicotine, *Pyridines, *Chromatographic analysis, *Gas chromatography, Ethylenes, Polymers, Glycols, Silicones, Towers (Chemistry).

For studying thermal decomposition products of tobacco alkaloids, pyridine bases and nicotine bases were analysed by gas chromatography. By using dioctyl phthalate as a stationary phase, the pyridine bases can be separated without tailing in the order of their boiling points, and there is a rectilinear relation between relative retention time and boiling point, in terms of that of pyridine. If an alcohol-treated polyethylene glycol 1500 is used as the stationary phase, relative retention time is affected, depending upon the position of the substitution group, and a rectilinear relation results between relative retention time and boiling point among those bases which have substitution groups in the same position. It was found that by combining them and representing them two-dimensionally, it is possible to estimate unknown substances. The nicotine alkaloids are difficult to separate because of them being liable to tail owing to their high boiling points. However, it is possible to separate and identify them by using silicone grease and polyethylene glycol 6000 treated with an alkali and sufficiently raising the temperature of the inlet end for improving the volatility of the sample. (Author)

Lang, Karl F. and Buffleb, H.
THE JOINT PYROLYSIS OF NAPHTHALENE AND BENZENE, AND OF PHENANTHRENE AND BENZENE. [May 63] 4p. 13 refs.
Order from SLA $1.10 63-18086

Trans. of Chemische Berichte (West Germany) 1962, v. 95, no. 4, p. 1049-1051.

DESCRIPTORS: *Benzenes, *Naphthalenes, *Phenanthrenes, Pyrolysis, Phenyl radicals, *Coal tar, Distillation, Chemical analysis.

The pyrolysis of naphthalene and benzene yields mostly biphenyl, quater phenyl, binaphthy 1- (2,2'), 1-phenyl- and 2-phenyl - naphthalene, 2,6- diphenyl naphthalene and a diphenylnaphthalene of unknown constitution. Phenanthrene and benzene yield biphenyl and 2-phenyl phe-

nanthrene. Moreover 2,3: 8,9- and 2,3; 10, 11- dibenzo perylene were also identified. (Author)

Leboucq, M. J.
DETECTION AND DETERMINATION OF CYANATES (APPLICATION TO POTASSIUM CYANATE). [1963] 9p 6refs
Order from SLA $1.10 63-18664

Trans. of J[ournal de] Pharm[acie et de] Chim[ie] (France) 1927 [ser. 8] v. 5, p. 531-539.

DESCRIPTORS: *Cyanates, *Potassium compounds, *Isocyanates, Ammonia, Bromides, Chemical analysis, Quantitative analysis.

For abstract see Chemical Abstract 21:3174, 1927

Luther, H., Lampe, F. and others.
THE QUALITATIVE AND QUANTITATIVE ANALYSIS OF THE ISOMERS OF HEXACHLOROCYCLOHEXANE WITH THE HELP OF RAMAN SPECTROSCOPY. [1963] 10p. 10 refs.
Order from SLA $1.10 63-18243

Trans. of Zeitschrift für Naturforschung (West Germany) 1950, v. 5a, no. 1, p. 35-40.

DESCRIPTORS: *Hexachlorocyclohexanes, Molecular isomerism, Quantitative analysis, *Raman spectroscopy, Calibration, Errors, Organic solvents, Furan, Benzenes, *Insecticides.

The method of Raman analysis of mixtures is briefly explained and the technique is elaborated upon with respect to analysis of the isomers of hexachlorocyclohexane. Calibration curves were established for mixtures of the α- and γ-forms in tetrahydrofuran and in benzene. Sources of analytical error are pointed out and their remedies suggested. These sources include the presence of a residual contaminated or undissolved β-component of colored impurities and of fluorescence, and the differential loss of individual isomers during processing. An absolute accuracy of $\pm$3 to 4% may be had by the given technique. The analysis takes about 12 hours.

Matsuda, A[kio] and Uchida [Hiroshi].
COMPOSITIONS OF HIGH BOILING PRODUCTS OBTAINED IN THE OXO REACTION OF PROPYLENE. [1963] [21p] 3refs
Order from SLA $2.60 63-20007

Trans. of [Tokyo Kogyo Shikensho Hokoku] (Japan) 1962, v. 57 [no. 1] p. 50-57.
Another trans. is available from SA $22.00 as SA Code-T1, Oct 62, 20p.

DESCRIPTORS: *Propenes, Chemical analysis, Gas chromatography, Quantitative analysis, Infrared spectroscopy, Nulcear magnetic resonance, Oxidation, Boiling, Ethanols, Methanols, Pentanols, Aldehydes, *Oxo process.

The high boiling by-product produced during the oxo reaction of propylene was isolated by distillation. The components of the by-product were then investigated after the addition of water. The sample was first divided into twelve fractions by fractional distillation, and each fraction was then identified by gas chromatography and by a chemical method such as isolation and quantitative analysis of the components. It was further characterized by its infrared spectrum, nuclear magnetic resonance spectrum and determination of the molecular weight. It was found that the high boiling by-product consists mainly of 2-ethyl-hexanol, small amounts of 2-ethyl-4-methyl pentanol and some C_8- diols, such as 2,2-dimethyl-1,3-hexanediol, and 2-ethyl-1,3-hexanediol. It also contains an ethereal compound (parabutyraldehyde). However, the presence of an alkoxy alcohol was not detected. (Author)

Pech, J., Broulik, D., and Mensik, P.
DETERMINATION OF SMALL QUANTITIES OF OXYGEN IN GASEOUS BUTADIENE. [1963] 6p. 6 refs
Order from SLA $1.10 63-18256

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1954, v. 4(29) no. 5, p. 182-183.

DESCRIPTORS: *Butadienes, Impurities, *Oxygen, *Gas analysis, *Polarographic analysis, Lithium compounds, Chlorides, Methanols, Elastomers

A method was tested for polarographic determination of small quantities of oxygen (below 1 volume %) in gaseous butadiene. Standards with oxygen content below 20.89 % were used for this purpose. The standards were prepared by a partial bubbling of the gas to be analyzed through a 0.1 N polarographic solution of lithium chloride in methyl alcohol; the process was carried out in a closed system. It was found that this method yields were reproducible results with a $\pm$ 2% accuracy. (Author)

Messerschmidt, W. and Tartler, G.
TESTING, BY MEANS OF A RADIO-ACTIVE METHOD, THE QUANTITATIVE ANALYSIS OF MINUTE QUANTITIES OF LEAD AS CARRIED OUT BY P. SCHMIDT AND CO-WORKERS. [1963] [7]p. (figs. omitted) 3 refs.
Order from SLA $1.10 63-18459

Trans. of Angew[andte] Chem[ie] (Germany) 1935, v. 48, p. 261-263.

DESCRIPTORS: *Lead, *Radioactivation analysis, Microanalysis, Electrolysis.

Mlejnek, O.
IDENTIFICATION OF CRUDE POLYMERS BY GAS-LIQUID CHROMATOGRAPHY OF THE PRODUCTS OF THEIR THERMAL DEGRADATION. [1963] 5p.
Order from ATS $6.50 ATS-57Q70SK

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1961, v. 11(36), no. 11, p. 604-607.

DESCRIPTORS: *Polymers, Identification, *Chromatographic analysis, Gas Chromatography, Pyrolysis.

Monnier, D., Roesgen, L., and Monnier, R.
POLAROGRAPHIC STUDY OF HEXACHLOROCYCLOHEXANE. [1963] 9p. 8 refs.
Order from SLA $1.10 63-18251

Trans. of Analytica Chimica Acta (Netherlands) 1950, v. 4, p. 309-315.

DESCRIPTORS: *Cyclohexanes, *Chlorides, *Polarographic analysis, Molecular isomerism, Separation, *Insecticides, *Hexachlorocyclohexanes.

Ripan, Raluca.
THE POTENTIOMETRIC DETERMINATION OF CYANATES. [1963] 5p 6refs
Order from SLA $1.10 63-18672

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (Germany) 1934, v. 98, p. 23-26

DESCRIPTORS: *Cyanates, Chemical analysis, Potentiometers, Titration

Rohrschneider, L.
POLARITY OF THE STATIONARY PHASE IN GAS CHROMATOGRAPHY (Polarität Stationärer Phasen der Gaschromatographie). [7 Feb 63] [14]p. 3 refs.
Order from SLA $1.60 63-18286

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1959, v. 170, p. 256-263.

DESCRIPTORS: *Polarization, *Gas chromatography, *Phase studies, Hydrocarbons, Gases, Molecular structure.

Twenty-three different stationary phases suitable for the analysis of gaseous hydrocarbons are arranged into a series of increasing polarity. A satisfactory separation of all gaseous paraffins and olefins can be expected only for two polarities. 1,3-butylenglycolsulfite corresponds to the one, a combination of 5 m. diethyl cyanamide and 5 m. oxadipropionitrile to the other. The properties of the combined columns can be determined approximately by means of a graphical method. (Author)

Shchigol, M. B.
POTENTIOMETRIC DETERMINATION OF CHLORIDES IN THE PRESENCE OF BROMIDES AND IODIDES IN AMMONIACAL SOLUTION. [1963] 10p 7refs
Order from OTS or SLA $1.10 63-18206

Trans. of Zavodskaya Laboratoriya (USSR) 1949, v. 15 [no. 5] p. 523-528.

DESCRIPTORS: Solutions, *Ammonia, *Iodides, *Bromides, *Chlorides, Potentiometers, Volumetric analysis, *Complex compounds, Halides.

A method of potentiometric determination of chlorides in ammoniacal solution by titration with silver nitrate, and a method of titrating various halogen ions successively, when present as mixtures was developed. In the titration of chloride with silver nitrate in ammoniacal solution, the maximum rate of change in potential of the silver electrode occurs when the amount of the reagent added is equivalent to half the total amount of chloride present. A theory is postulated concerning the existence of complex compounds of the type $[Ag(NH_3)_2X_2]^-$, where X denotes monovalent anion. (Author)

Sihtola, Hannes.
DETERMINATION OF VARIOUS CARBONYL GROUPS IN CELLULOSE (Über die Bestimmung von Verschiedenartigen Carbonylen in Cellulose). [25 Mar 63] [18]p. 41 refs.
Order from SLA $1.60 63-18355

Trans. of Faserforschung und Textiltechnik (East Germany) 1962, v. 13, no. 7, p. 304-309.

DESCRIPTORS: *Carbonyl radicals, *Cellulose, *Aldehydes, Chemical analysis, Oxidation-reduction reactions.

A series of cellulose samples oxidized with various oxidizing agents was analyzed by application of different methods of carbonyl group determination. It is stated that the results allow conclusions to be drawn with respect to the type of carbonyl groups in the samples. The carbonyl group determinations were effected by the hydroxylamine method, the chlorite method and a method modified by Wennerblom according to Geiger and Wissler. The reducing power was measured by different copper number methods as well as by the Formazan method. The experimental material was hydrocellulose and samples oxidized with periodate, nitrogen tetraoxide or hypochlorite, either as such, or after-treated with chlorite or boron hydride. On the basis of the experimental data obtained it can be established that hydrocellulose contains only carbonyl groups of a single type, whereas samples, which were oxidized at a low pH value with periodate, nitrogen tetraoxide or hypochlorite contain at least two more different types of carbonyl groups in addition to terminal aldehyde groups, in the two last named cases also carboxyl groups. On the other hand by oxidation with hypochlorite at a high pH value, probably only keto groups are formed in addition to the carboxyl groups. (Author)

Tagliavini, Giuseppe.
ARGENTOMETRIC DETERMINATION OF TETRAETHYL LEAD, ETHYLENE CHLORIDE AND BROMIDE IN ANTI-KNOCK MIXTURES. [1963] 10p
Order from K-H $10.00 K-H-7064

Trans. of [la] Chimica e l'Industria (Italy) 1957, v. 39, no. 11, p. 902-904.

DESCRIPTORS: Mixtures, *Antiknock, *Bromides, *Chlorides, *Ethylenes, *Ethyl radicals, Lead compounds, Chemical analysis

Tomonari, Akihisa.
SPECTROPHOTOMETRIC DETERMINATION OF TRACES OF CHLORIDE IN LARGE AMOUNTS OF BROMIDE. [1963] 10p. (figs. tables omitted) 7 refs.
Order from SLA $1.10 63-18715

Trans. of Nihon Kagaku Zasshi (Japan) [1962] v. 83, no. 6, p. 696-698.

DESCRIPTORS: *Chlorides, *Bromides, Oxidation, Spectrophotometers, Quantitative analysis.

A method for the determination of traces of chloride in large amounts of bromide was studied. An aqueous solution containing a fixed quantity of bromide ion was oxidized to potassium permanganate at the time when it was heated in nitric acidity. Conditions for the quantitative oxidation of bromide ion to bromine were sought. After removing bromine by heating the chloride ion in the aqueous solution was colorimetrically determined in accordance with the mercuric thiocyanate method. It was possible to speedily and accurately determine from 0.005 to 0.5 weight per cent of chloride ion in bromide ion and from 0.003 to 0.3 per cent of chloride ion in potassium bromide in accordance with this method. (Author)

Wacker, A. and Träger, L.
SIMPLE TITRATION OF ORGANIC COMPOUNDS (Einfache Titrierung Organischer Verbindungen). [23 May 63] [5]p. 6 refs.
Order from SLA $1.10 63-18274

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, no. 5, p. 168-169.

DESCRIPTORS: *Radiation chemistry, *Labeled substances, Organic compounds, *Tritium, *Uranium, Absorption, Glass, *Laboratory equipment, Design, *Volumetric analysis.

Tritium as well as uranium is absorbed and, if necessary, also desorbed safely in a glass apparatus and used according to Wilzbach for tritium labeling. (Author)

Wesley, W.
ANALYSIS OF FERRIC, FERROUS AND METALLIC IRON [Die Bestimmung von Ferri-, Ferro- und Metallischem Eisen in einer Probe]. [1963] 6p. (fig. omitted).
Order from SLA $1.10 63-16776

Trans. of Chemiker Zeitung (Germany) [1944] v. 68 [no. 6] p. 106-107.

DESCRIPTORS: *Iron, Iron compounds, Chemical analysis, Titration.

Zagorski, Zbigniew.
NEW METHODS OF POLAROGRAPHIC MICROANALYSIS. I. ALL PURPOSE PLASTIC VESSELS FOR POLAROGRAPHIC MICROANALYSIS: DROP TIME CONTROL IN MICROPOLAROGRAPHIC DETERMINATIONS. [1963] [9p] 11refs
Order from SLA $1.10 63-16534

Trans. of Chemia Analityczna (Poland) 1956, v. 1, p. 91-100.
Another trans. is available from SLA as 58-739.

DESCRIPTORS: *Polarographic analysis, *Microanalysis, *Electrolytic cells, Containers, *Acrylic resins, Electrodes.

Micro-vessels for polarographic analysis may be made from "organic glass" (Plexiglas) with great precision (unobtainable with glass). Organic glass (Polymethylmethacrylate) is a material resistant to many basic solutions. During the polarography of solutions of columes of 50 ml (0.05 ml), an apparatus for the control of drop time may be applied, either of the same type as in a normal cell, or by attaching the cell to the capillary. No difference was found between "regulated" polarograms of the usual type of cell and that of attached micro-vessels. The facility of construction of the cells allows the elaboration of micro-analytical methods involving separation. An example may be electrolysis using mercury on the bottom of the vessel as the cathode and the reference electrode as the anode. (Author)

Zocher, H. and Saechtling, Hj.
CRITICAL INVESTIGATIONS ON THE ANALYSIS OF HYPOSULFITE PREPARATIONS. [1963] 16p. 4 refs.
Order from SLA $1.60 63-18678

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (Germany) 1939, v. 117, p. 392-400.

DESCRIPTORS: *Sulfites, Chemical analysis, Titration.

Inorganic Chemistry

ACTION OF Al UPON CO_2: EXCERPTS. [1963] 3p. 2 refs.
Order from SLA $1.10 63-16174

Partial trans. of Chemiker Zeitung (Germany) 1898, 25 Nov, p. 243-244.

DESCRIPTORS: *Aluminum, *Carbon dioxide, Carbonates, Chemical reactions

Andrieux, L. and Barbetti, D.
ALKALI BORIDES. [1963] 2p 2refs
Order from SLA $1.10 63-18175

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1932, v. 194, p. 1573-1574 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Alkali metal compounds, *Sodium compounds, *Potassium compounds, *Lithium compounds, *Borides, Alkaline earth compounds, Rare earth compounds, Crystals, Synthesis (Chemistry)

Antuf'ev, V. V., Botinov, M. P. and others.
CORRELATION OF THE ACTIVITY AND ESR SPECTROL OF CHROMIUM OXIDE CATALYSTS. [1963] [6]p. 7 refs.
Order from OTS or SLA $1.10 63-18404

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 3, p. 353-357.

DESCRIPTORS: *Catalysts, *Chromium catalysts, *Oxides, *Resonance, Atomic properties, *Atomic spectrum, Crystals.

Electron spin resonance (ESR) spectra of chromium catalysts were taken and compared with the activities of these catalysts. Under the effect of some factors, the activity changes proportionally with the variation of intensity in a narrow line of the spectrum. Thus, the ESR method can become a simple evaluation method of the activity of the studied chromia-alumina catalysts. The experimental method was described. (Author)

Baroni, A.
THE OXYHALIDES OF LEAD. [1963] 12p. (figs. omitted) 8 refs.
Order from SLA $1.60 63-16022

Trans. of Accademia Nazionale dei Lincei [Rome]. Classe di Scienze, Fisiche, Matematiche e Naturali. Rendiconti (Italy) 1934, ser. 6, v. 20, p. 384-390.

DESCRIPTORS: *Lead compounds, *Oxyhalides, *Crystal structure, Colors, Chlorides, Iodides, Bromides

Blyakher, I. G. and Laryushkina, A. G.
THE PREPARATION OF SODIUM SULFITE AND SODIUM PYROSULFITE BY THE DRY METHOD IN REACTORS WITH FLUIDIZED BEDS (Poluchenie Sul'fita i Pirosul'fita Natriya Sukhim Sposobom v Reaktorakh s Kipyashchim Sloem). [1962] 14p. (figs. omitted) 3 refs.
Order from OTS or SLA $1.60 62-20257

Trans. of #Zh[urnal] Prikladnoi] Khim[ii] (USSR) 1962, v. 35 [no. 3] p. 503-511.

DESCRIPTORS: *Fluidized solids, Chemical reactions, *Sulfites, *Sodium compounds, Preparation, Heating.

The basic factors which determine the speed of the process for obtaining sodium sulfite and sodium pyrosulfite are: the moisture of the sodium carbonate, the moisture content of the gas (temperature of the gas saturated with water vapors), SO_2 content of the gas, linear speed in the free section of the reactor, and the height of the fluidized bed. The temperature in the fluidized bed was changed from 40° to 75°. It was established that at a definite range of the temperatures, the speed of the process does not change. The degree to which sulfur dioxide is utilized is markedly changed in the course of time: from 95 to 97% in the beginning of the process to 10% to 20% toward the end of the process of obtaining high-percentage sodium pyrosulfite. In order to obtain a product with a low Na_2SO_4 content, it was necessary to add an oxidation inhibitor, metol, to the initial sodium carbonate at a level of 0.03% per unit weight. Otherwise, especially when obtaining sulfite, an intense formation of sulfate forms, which may be as high as 15%. (Author)

Boguslavskii, I. M., Vol'fkovich, S. I. and others.
DERIVATION OF HYDROGEN FLUORIDE FROM SILICON TETRAFLUORIDE (Poluchenie Ftoristogo Vodoroda iz Chetyrekhftoristogo). [1963] [11]p. (foreign text included).
Order from OTS or SLA $1.60 63-16240

Trans. of [Khimicheskaya Promyshlennost' (USSR) 1961] no. 7, p. 450-452.
Orher translations are available from OTS or SLA $1.60 as 62-13583, FTD-TT-61-105, 23 Oct 61 [11]p. and $1.10 as 63-14165 [1963] 6p.

DESCRIPTORS: *Hydrogen compounds, *Silicon compounds, *Fluorides, Dioxides, Synthesis (Chemistry), *Fertilizers, Production, *Waste gases, Ammonium compounds, Decomposition.

For abstract see Technical Translations 7: 783, 1962.

Brasseur, P.
PHOSPHATES OBTAINED BY A DIRECT COMBINATION OF PHOSPHORIC ANHYDRIDE AND IRON (III) OXIDE. [1963] 48p. 13 refs.
Order from SLA $4.60 63-18884

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1945 [ser. 5] v. 12, p. 412-430.

DESCRIPTORS: *Phosphates, *Phosphorus compounds, *Oxides, *Iron compounds, Heating, Chemical precipitation, Chemical reactions, Heat of reaction, Crystallization, Transformations, *Anhydrides.

Brauer, George and Tiesler, Joachim.
THE REPLACEMENT OF MAGNESIUM IN MAGNESIUM PLUMBIDE BY LITHIUM OR SODIUM. [1963] [13p] 15refs
Order from SLA $1.60 63-18221

Trans. of Z[eitschrift für] Anorg[anische und Allgemeine] Chem[ie] (East Germany) 1950, v. 262, p. 309-318.

DESCRIPTORS: *Magnesium compounds, *Plumbides, Magnesium, *Sodium, *Lithium, Solubility, *Crystal lattices, X-ray diffraction analysis.

Attempts to determine the solubility of $Na_{15}Pb_4$ in the fluorite lattice of Mg_2Pb were unsuccessful. The addition of even 8.8% of $Na_{15}Pb_4$ produces a change in the arrangement of the lines in the X-ray diagram. The results of X-ray examination of samples to which have been added as much as 33.3% of $Na_{15}Pb_4$ are not in disagreement with the thermal analytical data of American authors. On the other hand about 8 to 10% of Li_4Pb can be taken up in Mg_2Pb without change of the lattice type. Even when this solubility limit was exceeded, the X-ray pattern of Mg_2Pb was still clearly to be seen along with the newly appearing pattern, even upon addition of as much as 42% of Li_4Pb. Density studies on the alloys show that the investigated mixed compounds of lithium, magnesium and lead are largely of the addition type. (Author)

Calignon, Ph. de and Camescasse, P.
ELIMINATION OF THE CO^2 CONTAINED IN CHLORINE. [1963] 4p 3refs
Order from SLA $1.10 63-18563

Trans. of mono. Congrès de Chimie Industrielle (no. 18) Nancy, 1938, Comptes Rendus, p. 919-921.

DESCRIPTORS: *Chlorine, Purification, *Carbon dioxide, *Carbonic acids, *Absorbants, *Calcium compounds, *Oxychlorides.

Deiss, E. and Schikoor, G.
CONCERNING FERROHYDROXIDE (IRON-2-HYDRIDE). [1963] 13p. (figs. tables omitted) 12 refs.
Order from SLA $1.60 63-18145

Trans. of Z[eitschrift für] Anorg[anische] u[nd] Allg[emeine] Chem[ie] (Germany) 1928, v. 172, p. 32-42.

DESCRIPTORS: *Flotation, *Iron compounds, Hydroxides, Hydrides, *Colloids, *Coagulation, Oxidation

Enikeev, E. Kh. and Krylova, A. V.
THE PROBLEM ON POISONING OF IRON CATALYSTS FOR THE AMMONIA SYNTHESIS. [1963] 8p. 14 refs.
Order from OTS or SLA $1.10 63-18407

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3 [no. 1] p. 139-144.

DESCRIPTORS: *Iron catalysts, *Ammonia, Synthesis (Chemistry), Oxygen, Carbon compounds, Oxides, Water, Sulfides

Investigation on the effect of catalytic poisons (O_2, CO, CO_2, H_2O, H_2S) on the work function of iron catalysts in the synthesis of ammonia has shown that all poisons increase the work function by 0.2-0.6 ev. These results permit assumptions on an electrostatic model of poisoning and promoting of the ammonia catalysts. (Author)

Feitknecht, W. and Michaelis, W.
HYDROLYSIS OF IRON. III. PERCHLORATE SOLUTIONS. [1963] 25p. 12 refs.
Order from SLA $2.60 63-18780

Trans. of Helvetica Chimica Acta (Switzerland) 1962, v. 45 [no. 1] p. 212-224.

DESCRIPTORS: *Iron compounds, Hydroxides, *Hydrolysis, *Perchlorates, Solutions, Chemical precipitation, Colloids, *Crystallization

An investigation was made of the reaction products formed when $Fe(H_2O)_6^{3+}$ is deprotonated in perchlorate solutions. When a small amount of base is added, metastable solutions containing the ions $Fe(H_2O)^{3+}$, $Fe(H_2O)_5OH^{2+}$, $Fe_2(H_2O)_8(OH)^{4+}$ and $Fe(H_2O)_4(OH)^{+}$ are formed, and α-FeOOH slowly crystallizes out. In a narrow intermediate range immediately after adding the base colloidal amorphous $Fe(OH)_3$ and crystalline α-FeOOH are formed. If more base is added, a dark brown solution of colloidal amorphous $Fe(OH)_3$ results, in which the crystallization of α-FeOOH, under certain conditions also of γ-FeOOH, begins after an induction period of several days. Only when a nearly equivalent amount of base is added, $Fe(OH)_3$ is precipitated. On aging, this changes partly into α-Fe_2O_3, partly into α-FeOOH, a rather large amount remaining amorphous. In all the systems, no stable state is reached at room temperature even after years. If a small amount of Fe^{2+}-ions is co-precipitated, a complete crystallization of the amorphous hydroxide to α-FeOOH takes place. The mechanism of the formation of the crystalline phases is discussed. (Author)

Franzen, Volker and Schmidt, Hans-Jürgen.
ON THE MECHANISM OF HOFMANN ELIMINATION WITH SULFONIUM SLATS. [1962] 4p. (figs. omitted) 16 refs.
Order from SLA $1.10 62-16317

Trans. of Chem[ische] Ber[ichte] (West Germany) 1961, v. 94, p. 2937-[2942].

DESCRIPTORS: *Sulfonium radicals, Salts, Bromides, Iodides, *Elimination reactions, Triphenylmethyl radicals, Deuterated compounds, Chemical reactions

The Hofmann elimination of cyclooctyl-dimethylsulfonium iodide with trityl sodium to the cis cyclooctene is a cis elimination. The sulfonium salt reacts with NaOH to methyl-cyclooctyl sulfide; Hofmann elimination occurring to only a slight extent. Even when the hydrogen atoms in a beta position to the sulfonium group are activated by a phenyl residue, the Hofmann elimination with trityl sodium occurs according to the alpha-beta mechanism. This was proved by experimentation with deuterized dimethyl-[2-phenyl-ethyl]-sulfonium bromide. (Author)

Hackspill, L. and Grandadam, R.
REPLACEMENT OF ALKALI METALS BY IRON. [1963] 3p. 1 ref.
Order from SLA $1.10 63-16167

Trans. of [Academie des Sciences, Paris. Comptes Rendus] (France) [1925, v. 180] p. 68-70 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Alkali metals, *Iron, Chlorides, Substitution reactions

Hackspill, L. and Kieffer, A. P.
[HYDRATES OF OXIDES AND OF MINERAL SALTS]: EXCERPT. [1963] [3]p. (figs. omitted) 4 refs.
Order from SLA $1.10 63-18128

Partial trans. (p. 248-249) of Annales de Chimie (France) 1930, ser. 10, v. 14 [p. 227-282].

DESCRIPTORS: *Hydrates, Oxides, Minerals, Salts, *Magnesium compounds, Hydroxides, Dehydration.

Hüttig, Gustav, F. and Frankenstein, Wilhelm.
CONTRIBUTIONS TO KNOWLEDGE OF OXIDE-HYDRATES. XVIII. CONTRIBUTION TO KNOWLEDGE OF SYSTEM OF MAGNESIUMOXIDE-WATER (Beiträge zur Kenntnis der Oxydhydrate. XVIII. Zur Kenntnis des Systems Magnesiumoxyd/Wasser). [1963] [22]p. (foreign text included) 8 refs.
Order from SLA $2.60 63-18127

Trans. of [Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1930, v. 185] p. 403-412.

DESCRIPTORS: *Magnesium compounds, *Oxides, *Hydrates, Water, Synthesis (Chemistry), *Dehydration, X-ray diffraction analysis, Phase studies.

Kadushkina, L. A. and Bakturov, A. B.
CITRATE-SOLUBLE FORM OF P_2O_5 IN THERMOPHOSPHATES [Limonnorastvorimaya Forma P_2O_5 v Termofosfatakh]. [1963] 13p. (tables omitted) 5 refs.
Order from OTS or SLA $1.60 63-16205
T
Trans. of [Akademiya Nauk Kazakhskoi SSR, Alma Ata. Izvestiya. Seriya Khimicheskaya] 1953, no. 5, [p. 107-115].

DESCRIPTORS: *Minerals, *Phosphates, Calcium compounds, Sodium compounds, Separation, Solubility, Solvents, *Citrates, Fertilizers.

For abstract see Chemical Abstracts 50: 16503, 1956

Krebs, Heinz and Weber, E. F.
THE STRUCTURE AND PROPERTIES OF THE SEMIMETALS. VI. THE ALLOTROPISM OF SULFUR [Uber die Struktur und Eigenschaften der Halbmetalle. VI. Die Allotropie des Schwefels]. [1963] 9p. 33 refs.
Order from OTS or SLA $1.10 63-14890

Trans. of Z[eitschrift fllr] Anorg[anische und] Allg[emeine] Chem[ie] (East Germany) 1953, v. 272 [no. 5/6] p. 288-296.
Another trans. is available from SLA $1.60 as 62-10225 [1961] 15p.

DESCRIPTORS: *Sulfur, Molecular structure, Crystal structure, Catalysis, Amines.

For abstract see Technical Translations 7: 753, 1962.

Lange, Willy.
ON A SALT OF PHOSPHORO-HEXAFLUORIC ACID. [1963] [7]p. 3 refs.
Order from SLA $1.10 63-16836

Trans. of [Chemische] Berichte (Germany) 1928, v. 61, p. 799-801.

DESCRIPTORS: *Phosphorus compounds, *Fluorides, Salts, Inorganic acids, Chemical reactions

Matsui, Masanao.
REDUCTION WITH COMPLEX METAL HYDRIDE. [1963] [22p] 3refs
Order from SLA $2.60 63-20008

Trans. of Nihon Nogei-Kagakkai Shi (Japan) 1957, v. 31 [no. 10] p. 107-118.
Another trans. is available from K-H $25.00 as K-H-8524 [1963] 25p.

DESCRIPTORS: *Reduction (Chemistry), *Hydrides, *Complex compounds, Metallic compounds.

The method of preparation and the properties of lithium aluminum hydride, sodium boron hydride, potassium boron hydride (KBH_4), sodium trimethoxy boron hydride ($Na(BOCH_3)_3$), aluminum magnesium hydride ($Mg(AlH_4)_2$), aluminum boron hydride ($Al(BH_4)_3$), lithium gallium hydride ($LIGaH_4$), calcium boron hydride ($Ca(BH_4)_2$), strontium boron hydride ($Sr(BH_4)_2$), and the related compounds, aluminum hydride (AlH_3) and aluminum alkyl hydride ($AlHR_2$) are outlined.

Meyer, Friedrich and Zappner, R.
THE PREPARATION OF LARGE AMOUNTS OF PURE BORON NITRIDE. [1963] 5p 9refs
Order from SLA $1.10 63-18174

Trans. of [Chemische] Berichte (Germany) 1921, v. 54, p. 560-566.

DESCRIPTORS: *Boron compounds, *Nitrides, Synthesis (Chemistry), Chlorides, Ammonia, Laboratory equipment, Design

Meyer, Theodor.
METHOD FOR THE PREPARATION OF DRY HYDROGEN CHLORIDE GAS FROM SODIUM CHLORIDE BY MEANS OF SULFURIC ACID WITH SIMULTANEOUS RECOVERY OF BISULFATE. [1963] 4p.
Order from OTS or SLA $1.10 63-18247

Trans. of unidentified patent, patented in the German State from 13 Oct 06 on.

DESCRIPTORS: *Hydrogen compounds, *Chlorides, Gases, Sodium compounds, *Sulfuric acid, Sulfates.

Peyronel, Giorgio.
VANADATES OF ZIRCONIUM. II. EXISTENCE AND STRUCTURE OF THE PYROVANADATE ZrV_2O_7.
1 May 63, 8p 4refs
Order from SLA $1.10 63-18861

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1942, v. 72, p. 83-89.

DESCRIPTORS: *Zirconium compounds, *Vanadates, Preparation, Zirconyl radicals, Nitrates, Ammonium compounds, Titanium compounds, Tin compounds, Catalysts, Hydrogen peroxide, X-ray diffraction analysis.

Poninski, Marek and Ulinska, Alina.
LABORATORY SCALE PRODUCTION OF ANHYDROUS FERRIC CHLORIDE FREE FROM Mn^{2+} AND Cu^{2}. [1963] [7p] (fig omitted) 8refs
Order from SLA $1.10 63-20128

Trans. of Roczniki Chemii (Poland) 1956, v. 30 p. 311-[314].

DESCRIPTORS: *Iron compounds, *Chlorides, Production, Synthesis (Chemistry), Purification, Impurities, *Manganese, *Copper, *Laboratory equipment, Design.

Rosolovskii, V. Ya.
THERMAL DECOMPOSITION OF NITROSYL PERCHLORATE. [1963] 3p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 63-18310

Trans. of [Akademiya Nauk SSSR. Doklady] 1962, v. 146, no. 1 [p. 115-117].
An unedited rough draft trans. is available from OTS or SLA $1.10 as 63-19195, FTD-TT-63-116, 18 Mar 63 [7]p.

DESCRIPTORS: *Nitroso radicals, *Perchlorates, Pyrolysis, Reaction kinetics.

It is shown that the thermal decomposition of nitrosyl perchlorate proceeds in two stages with an intermediate formation of nitronium perchlorate, which is more stable than nitrosyl perchlorate.

Rudy, E. and Stecher, P.
CONTRIBUTION TO THE CONSTITUTION OF THE SYSTEM HAFNIUM-OXYGEN. [1963] [12]p. (figs. tables refs. omitted).
Order from SLA $1.60 63-18308

Trans. of Journal of the Less-Common Metals (Netherlands) 1963, v. 5 [no. 1] p. 78-89.

DESCRIPTORS: *Hafnium compounds, *Oxides, Grain structures (Metallurgy), Mechanical properties, Fused materials, Electrical conductance, Oxygen

Using sintered and arc-melted specimens, the hafnium-oxygen system was investigated by means of X-ray and metallographic methods as well as by melting point determinations. At 1350°C α-Hafnium dissolves 20.5 a/o O ($a = 3.214$ Å, $c = 5.101$ Å), the solubility range was found to be almost independent of temperature. The following eutectic reactions were established.
Melt (8 a/o O) → β Hf(5 a/o O) + α-Hf(11 a/o O), $T = 2000 \pm 30°C$.
Melt (29 a/o O) → α Hf(21 a/o O) + HfO_{2-x}(x=0.25), $T = 2180 \pm 40°C$.
The oxygen-stabilized α modification (21 a/o O) melts congruently at 2300°C. The electrical resistivity of α Hafnium increases linearly with the oxygen content ($\rho_0 = 35.5\ \mu\Omega cm$, ρ (8 a/o O) = 180 μΩcm), whereas the course of the hardness in the range from 1-20 a/o O can be described fairly accurate by a parabolic equation: $HV_{20} = 270 + 80\sqrt{a/o\ O}$. (Author)

Sartori, P.
ELECTROFLOURINATION OF GASES [Elektrofluorierung von Gasen]. [1963] 2p.
Order from ATS $2.50 ATS-87Q70G

Trans. of Angew[andte] Chem[ie] (West Germany) 1963, v. 75 [no. 9] p. 417.

DESCRIPTORS: *Gases, *Fluorination.

Thomas, M. V.
ON THE MIXED HALIDES OF LEAD. [1963] 3p.
Order from SLA $1.10 63-16792

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1899, v. 128, p. 1234 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Lead compounds, *Halides, Synthesis (Chemistry), Bromides, Chlorides, Iodides, Complex compounds, Salts.

Vol'nov, I. I., Chamova, V. N., and Sergeeva, V. P.
NEW DATA ON THE FORMATION OF CALCIUM AND STRONTIUM SUPEROXIDES (Novye Dannye po Obrazovaniyu Nadperekisei Kal'tsiya i Strontsiya). [1963] [9]p. 4 refs.
Order from OTS or SLA $1.10 63-18369

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1959, v. 4 [no. 2] p. 253-256.

DESCRIPTORS: *Calcium compounds, *Strontium compounds, *Peroxides, *Oxides, Decomposition, Dehydration

The optimum conditions for obtaining a calcium peroxide preparation containing ~40 wt. % $Ca(O_2)_2$ from $CaO_2 \cdot 2H_2O_2$, and a strontium peroxide preparation containing ~30 wt. % $Sr(O_2)_2$ from $SrO_2 \cdot 2H_2O_2$, are: $t = 50°$, time = 100 mins., pressure = 10 mm Hg, at a distribution of 1 g $MeO_2 \cdot 2H_2O_2$ on a surface of ~1800 cm^2. In the solid decomposition products of $CaO_2 \cdot 2H_2O_2$, with an increase in $Ca(O_2)_2$ there is a decrease in CaO_2 and an increase in $Ca(OH)_2$. The preparations containing ~40 wt. % $Ca(O_2)_2$ are stable on preservation in a hermetically sealed container. (Author)

Wagner, Gustav and Binder, Horst.
INVESTIGATIONS OF THE BINARY SYSTEMS $BaO-SnO_2$ AND $BaO-PbO_2$. II. DETERMINATION OF CRYSTAL STRUCTURE (Untersuchung der Binären Systeme $BaO-SnO_2$ und $BaO-PbO_2$. II. Kristallstrukturbestimmungen). [1963] [22p] (foreign text included) 11refs
Order from SLA $2.60 63-18819

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1959, v. 298, p. 12-21.

DESCRIPTORS: Oxides, *Lead compounds, *Barium compounds, *Tin compounds, *Crystal structure, Crystal lattices, Perovskites.

Powdered diagrams of the three compounds, barium-orthostannate (IV), Ba_2SnO_4; bariummetaplumbate (IV), $BaPbO_3$, and bariumorthoplumbate (IV), Ba_2PbO_4, were made with the counting tube goniometer. For the $BaPbO_3$ prepared first, in analogy to $BaSnO_3$, the cubic perovskite lattice was found with $a = 4.265$Å, $Z = 1$; $d_r = 8.40 g/cm^3$. The two ortho compounds crystallized tetragonally in the crystal lattice of K_2NiF_4 with the following values: For Ba_2SnO_4 $a = 4.140$Å; $c = 13.295$Å; $c/a = 3.21$; $Z = 2$; $d_r = 6.67 g/cm^3$ and for Ba_2PbO_4 $a = 4.305$Å; $c = 13.273$Å; $c/a = 3.08$; $Z = 2$; $d_r = 7.37 g/cm^3$. (Author)

E CONDENSATION OF ACETOPHENONE WITH ALIPHATIC ALDEHYDES. [1963] 4p 4refs
Order from SLA $1.10 63-18102

Trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Acetophenones, Ethyl radicals, Propyl radicals, Butyl radicals, Pentyl radicals, Hexyl radicals, Synthesis (Chemistry), Ketones, Aldehydes, Condensation reactions.

IMPROVEMENT IN THE MANUFACTURE OF HALOGENATED AROMATIC HYDROCARBONS. [1963] 4p
Order from OTS or SLA $1.10 63-18665

Trans. of French patent 993,097, gr. 14, cl. 4, 2 Jun 49, by Compagnie de Products Chimiques et Electrometallurgiques Alais, Froges et Camargue.

DESCRIPTORS: *Benzene derivatives, Benzenes, *Halogenation, Hydrocarbons, Chlorides, Chlorination, *Cyclohexanes, Surface-active substances.

The invention has as its object a process for the preparation of polyhalogen derivatives of benzene containing at least 3 halogen items per molecule which comprises heating the p. yhalogen derivative of cyclohexane containing at least 6 atoms of halogen with an aqueous alkaline solution in the presence of a small proportion of an emulsifier containing both a hydrophobic and a hydrophilic group in the molecule. (Author)

JOURNAL OF ENGINEERING PHYSICS, 1963, VOL. 6, NO. 4, 2 Oct 63, 193p JPRS: 21292.
Order from OTS $3.00 63-31868

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1963, v. 6, no. 4, p. 3-138.

DESCRIPTORS: *Physics, *Engineering, *Heat transfer, Fluid flow, Liquid metals, Differential equations, Porous materials, Vaporization, Sprays, Fluidized solids, Incompressible flow, Heat transfer coefficients, Driers (Apparatus), Mass transfer, Thermal conductivity, Thermal insulation, Sucrose, Heat exchangers, Magnetohydrodynamics, Strain gages, Thermodynamics, Reviews, Bibliographies, *Applied physics.

Contents:
Heat transfer in tubes with internal heat sources in the flow of liquid, by B. S. Petukhov and L. G. Genin
Effect of porous suction or injection of various substances on heat transfer of blunt bodies in a flow of fluid, by V. P. Motulevich
Heat transfer in a flow of liquid metals in circular tubes, by V. I. Subbotin and P. A. Ushakov
Possible solutions of thermodynamic gas-flow equations in case of a flow of viscous gas with heat transfer, by V. V. Usanov
Effect of bulk density of porous materials on heat transfer, by M. G. Kaganer and L. I. Glebova
Mechanism of growth of vapor bubbles on a heating surface during boiling, by D. A. Labuntsov
Exact solutions of the energy equation for a flow of viscous incompressible fluid in tubes, by I. N. Sadikov
Nature of heat transfer in spray cooling, by A. S. Kadinova and G. N. Kheifets
Heat transfer between granular particles and air in a fluidized bed, by E. A. Kazakova and A. I. Denega
Dependence of heat transfer coefficient on degree of longitudinal and transverse nonisothermality in a turbulent flow of fluid in the case of the internal problem, by L. I. Kudryashchev and V. K. Lyakhov
On the calculation of pneumatic dryers, by V. A. Sheiman
On the determination of mass transfer potential, by L. M. Nikitina
An effective method of reducing contact thermal resistance, by V. S. Miller
Specific heat of molten alkali metals, by Yu. P. Os'minin
Thermodynamic equations of heat and mass transfer in capillary-porous bodies washed by a pulsating air stream, by V. F. Mironov
Thermal conductivity of powdered inorganic insulation, by E. L. Mitel'man and Ya. I. Panova
Heat transfer coefficients of raw cane sugar, by V. E. Stetsyuk
Choice of number of stages for a multistage heat exchanger with a fluidized bed, by A. I. Tamarin
Modes of operation of a magnetohydrodynamic channel, by E. P. Zimin
Unsteady heating of a cone, by N. N. Gvozdkov
A semiconductor soil strain gauge, by G. S. Komaishko and V. K. Stumbur
Rapid method of calculating heating of bodies by radiation, by G. P. Boikov
On an unsteady problem of the theory of heat conduction for a cylinder, by A. F. Khrustalev
Solution of system of differential equations of molecular transfer in presence of three interconnected fluxes of generalized charges, by P. V. Tsoi
Calculation of the thermodynamic properties of deuterium, by V. A. Rabinovich
On critical phenomena in liquids and gases, by A. S. Predvoditelev
Book reviews and bibliography
Conference of Readers of the "Engineering Physics Journal" Dushanbe, Oct 62, by T. D. Li

PREPARATION OF ALKYL OR ALKYLATED ESTERS OF PYRIDINE CARBOXYLIC ACIDS. [1963] 5p
Order from OTS or SLA $1.10 63-18645

Trans. of French patent 1,170,299, appl. 14 Mar 57, issued 22 Sep 58, by Aries Assoc.

DESCRIPTORS: *Pyridine derivatives, *Alkylation, *Carboxylic acids, Alkyl radicals, Esters, Surface-active substances, Butyl radicals, Alcohols, Nicotinic acid.

The invention is characterized by the fact that pyridine carboxylic acids are refluxed with alkanols at temperatures between 140-225° C and at superatmospheric pressures. After the reaction, the mass is submitted to distillation, excess alcohol being separated as the

second fraction: the small amount of undistillable residue remaining can be treated to recover pyridine carboxylic acid or it may be discarded if desired. (Author)

PROCESS FOR THE PREPARATION OF CHLORINATED PARAFFIN HYDROCARBONS. [1963] [3]p.
Order from SLA $1.10 63-16820

Trans. from unidentified mono. (report) of Ruhrchemie A.G., Oberhausen-Holten, 13 Jan 44.

DESCRIPTORS: *Chlorination, *Hydrocarbons, Chlorides, *Ethylenes, Purification.

TREATMENT OF MONOHALIDES OF THE VINYL TYPE. [1963] [10p]
Order from OTS or SLA $1.10 63-20174

Trans. of French patent 787,529, cl. 1, gr. 14, appl. 19 Mar 35, given 8 Jul 35, pub. 24 Sep 35, by Dutch Petroleum Co., Inc., Netherlands (appl. 19 Mar 34, U.S.A.).

DESCRIPTORS: *Halogen compounds, Solutions, *Halides, *Polyvinyl chloride, Water, Organic compounds, Acids, Chemical reactions, Monocyclic compounds

Abramov, V. S., Sergeeva, E. V., and Chelpanova, I. V.
ACTION OF HALIDE-SUBSTITUTED SIMPLE ETHERS ON TRIETHYLPHOSPHITE AND SALTS OF DIETHYLPHOSPHOROUS ACID. [1963] 12p (formulae omitted) 10refs
Order from OTS or SLA $1.60 63-20255

Trans. of Zhurnal Obshchei Khimii (USSR) 1944, v. 14, no. 11/12, p. 1030-1037.
Another trans. is available from SLA as RT-2398, 14p.

DESCRIPTORS: *Ethers, Halides, Substitution reactions, *Phosphorous acids, Salts, Ethyl radicals, *Phosphites.

Dibromomethyl ether with diethylphosphorous potassium, under distillation of the reaction products with potassium bromide, gives the dipotassium salt of diethyl ether of diphosphinomethyl ether. Highly-dispersed sodium-bromide reacts with ethyl ether of diphosphonomethyl ether and with ethyl ether of benzyloxymethylphosphonic acid, and gives the disodium salt of diethyl ether of diphosphonomethyl ether and the sodium salt of ethyl ether of benzyloxymethylphosphinic acid. Chloromethylbenzyl ether with ethyl ether of phosphorous acid gives ethyl ether of benzyloxymethylphosphinic acid, which is saponified by hydrochloride acid into oxymethylphosphinic acid. Chloromethylbenzyl ether and bromomethylbenzyl ether with diethylphosphorous sodium and dibutylphosphorous sodium, under distillation of the reaction products with sodium chloride or sodium bromide, give the sodium salt of the ether of benzyloxymethylphosphinic acid.

Alexander, W. A. and Schumacher, H. J.
THE PHOTOCHEMICAL REACTION BETWEEN CHLORINE AND CHLORAL. [1963] 13p 6refs
Order from SLA $1.60 63-18572

Trans. of Zeitschrift für Physikalische Chemie [Leipzig] (Germany) 1939, v. 44B, p. 58-68.

DESCRIPTORS: *Chlorine, *Photochemistry, *Reaction kinetics, Heat of activation, Chemical reactions, *Acetaldehydes, *Chlorides.

Andrianov, K. A.
INVESTIGATIONS IN THE REALM OF ALKYL- AND ARYL- SUBSTITUTED ESTERS OF SILICIC ACID. IV. THE MECHANISM OF HYDROLYSIS AND ANHYDRIDE FORMATION OF ALKYLTRIETHOXYMONOSILANES (Issledovaniya v Oblasti Alkil- i Aril-Zameshchennykh Efirov Kremnevoi Kisloty. IV. O Mekhanizme Gidroliza i Angidrizatsii Alkil-Trietoksimonosilanov). [1963] [24p] (foreign text included) 6refs
Order from OTS or SLA $2.60 63-18610

Trans. of Zhurnal Obshchei Khimii (USSR) 1938, v. 8, no. 13, p. 1255-1263.

DESCRIPTORS: *Silicic acids, *Silanes, Alkyl radicals, Alkoxy radicals, Hydrolysis, Anhydrides, Butyl radicals, Esters, Substitution reactions.

(See also 59-20729)

Andrianov, K. A. and Shapatin, A. S.
INTERACTION BETWEEN ALUMINUM ISOPROPYLATE AND DIALKYL ESTER OF METHYLPHOSPHINIC ACID. [9 Apr 63, 7p.] 1 ref.
Order from OTS or SLA $1.10 63-18334

Trans. of #Akad[emiya] Nauk SSSR. [Otdelenie Khimicheskikh Nauk]. Izv[estiya] 1962, no. 10, p. 1753-1756.

DESCRIPTORS: *Aluminum compounds, *Propyl radicals, Alkoxides, *Phosphinic acids, Methyl radicals, Butyl radicals, Ethyl radicals, Esters, Chemical reactions, *Metalorganic compounds, Synthesis (Chemistry).

The reactions between aluminum isopropylate and diethyl and dibutyl esters of methylphosphinic acid give ethyl or butylisopropylether, while the alkoxy groups on the phosphorus atom have different reactivities. Under definite conditions the reaction can be directed toward the formation of compounds which contain methylalkoxyphosphinoxy groups on the aluminum atom. A new compound: methylethoxyphosphinoxy(diisopropoxy)aluminum was obtained. (Author)

Andrianov, K. A., Kurakov, G. A., Khananashvili, L. M., and Lomonosova, T. A.
TRANSAMINATION OF BIS(DIETHYLAMINO) DERIVATIVES OF SILANES AND OF OCTAMETHYLCYCLOTETRASILAZANE WITH AROMATIC AMINES. 15 Jul 63 [8p] 7refs
Order from OTS or SLA $1.10 63-18893

Trans. of #Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1963, v. 33 [no. 4] p. 1294-1299.

DESCRIPTORS: *Silanes, Anilines, *Amines, Ethyl radicals, Methyl radicals, Alkyl radicals.

The following new compounds were synthesized: bis(diethylamino)methylsilane, bis(diethylamino)ethylamino)ethylsilane, diethylaminophenylaminoethylsilane, and bis(phenylamino)ethylsilane. By means of a transamination reaction, polymers were prepared and their properties studied. It was shown that the transamination of bis(diethylamino)ethylsilane with aniline proceeds without replacement of the hydrogen on the silicon atom by an amino group. (Author)

Arutyunyan, S. and Marutyan, S.
REACTION OF FORMATION OF VINYLCHLORIDE FROM ACETYLENE AND CHLOROHYDROGEN. [1963] 19p. (figs. omitted) 10 refs.
Order from OTS or SLA $1.60 63-13123

Trans. of Kauchuk i Rezina (USSR) 1937, no. 2, p. 36-44.
Another trans. is available from SLA as RT-3512 [22]p.

DESCRIPTORS: *Vinyl chlorides, Synthesis (Chemistry), *Acetylenes, *Hydrochloric acid, *Copper catalysts, *Ammonium compounds, Chlorides, Complex compounds,

Bansho, Yoshie, Sekiguchi, Tatsuo, and Suzuki, Shigeru.
SYNTHESIS OF COPPER PHTHALOCYANINE SULFATE AND ITS PROPERTIES. Rept. 5 of Studies of Phthalocyanine Organic Pigments. [1963] [17p] 8refs
Order from SLA $1.60 63-18741

Trans. of Kogyo Kagaku Zasshi (Japan) [1962] v. 65, no. 12, p. 2013-2017.

DESCRIPTORS: *Dyes, *Organic pigments, *Phthalocyanines, Copper compounds, Sulfates, Metalorganic compounds, Synthesis (Chemistry), Chemical properties, Physical properties, Molecular structure, X-ray diffraction analysis, Infrared spectroscopy

When copper phthalocyanine reacts with undiluted sulfuric acid in suitable organic solvents the sulfate is separated. The sulfate was separated in pure form by removing the sulfuric acid attached to its crystals. In an attempt to obtain a pure sulfate, the synthesizing conditions were examined. The quantity of the sulfuric acid combined in the sulfate and its chemical structure, chemical and physiochemical properties were investigated. The following results were obtained: (1) Copper phthalocyanine was dispersed in ethyl acetate and stirred together with 6 mol ratios of 98% sulfuric acid at 40° 50°C for 3 hours. After filtering, it was washed with ethyl acetate and petroleum ether. In this way, pure copper phthalocyanine sulfate of a green color was synthesized. (2) Ethyl acetate and ice ethyl acetic acid are suitable dispersing agents for this synthesizing method. (3) From the values obtained by the analyses of its constituent elements and the values obtained by the alkali titration, the resultant sulfate was confirmed as containing 2 mol of the combined sulfuric acid in its molecules. (Author) (See also 63-16644)

Bansho, Yoshie, Suzuki, Shigeru and others.
SYNTHESIS OF BROMINE-SUBSTITUTED COPPER PHTHALOCYANINES AND THEIR SUITABILITY AS PIGMENTS. Rept. 8 of Studies on Phthalocyanine Organic Pigments. [1963] [17]p. 11 refs.
Order from SLA $1.50 63-13512

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 12, p. 2027-2032.

DESCRIPTORS: *Dyes, *Organic pigments, *Metalorganic compounds, *Copper compounds, *Phthalocyanines, *Bromides, Synthesis (Chemistry), Phthalic anhydride, Bromination, Metallation, Physical properties, Chemical properties.

Studies were made on the method of synthesizing pigments, in which the aromatic nucleus of copper phthalocyanines is substituted with 1~16 bromine atoms, and examined their properties. Synthesized were 4-bromophthalic anhydride, 4,5-dibromophthalic anhydride and tetrabromophthalic anhydride by brominating phthalic anhydride. Then, by using these bromophthalic acids and phthalic anhydrides as raw materials and by employing the Wyler method, bromine-substituted copper phthalocyanines were synthesized. As a result of the analysis of these compounds, it was recognized that 1~16 atoms of bromine were substituted in them. Also examined were the color tones, crystalline transformation growth in solvents, fastness to light, and physical and chemical properties. (Author) (See also 63-16644)

Belomestnykh, I. P., Bogdanova, O. K., and Balandin, A. A.
EFFECT OF STRUCTURE OF HYDROCARBONS ON THEIR DEHYDROGENATION KINETICS. [1963] [7p] 5refs
Order from OTS or SLA $1.10 63-20211

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 4] p. 467-472.

DESCRIPTORS: *Hydrocarbons, *Dehydrogenation, *Molecular structure, Reaction kinetics.

Catalytic dehydrogenation kinetics was studied on a series of alkaryls. It was found, that all alkylaromatic hydrocarbons with branched radicals and with substituents in the ring dehydrogenate more rapidly. Changes of free energy, heat content, entropy were determined during adsorptive displacement from the catalytically active surface. Existence of a logarithmic relationship of the activation energy and the action constant was confirmed. It was stated that dehydrogenation products can be obtained in high yields at 565-620 C and great space velocities on the given catalyst. For example, vinyltoluene-in a yield of 43-57%, at a supply rate of 0.5-1.0 hour^{-1}; 30 to 36% divinylbenzene + 22.0-20% ethylvinylbenzene, at a supply rate of 0.5-0.7 hour^{-1}, per pass. (Author)

Berlinerblau, J.
INDOLE FROM DICHLOROETHER AND ANILINE. [1963] 7p 5refs
Order from SLA $1.10 63-20175

Trans. of Monatshefte für Chemie (Austria) 1887, v. 8, p. 180-186.

DESCRIPTORS: Anilines, Ethers, Chlorides, *Indoles, Synthesis (Chemistry), Ethyl ethers.

Bert, L. and Dorier, P.-Ch.
ON A NEW METHOD FOR THE SYNTHESIS OF CINNAMALDEHYDE AND ITS HOMOLOGUES. [1963] 3p. 2 refs.
Order from SLA $1.10 63-18106

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1930, v. 191, p. 332-333 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Aldehydes, *Cinnamic acids, Physical properties, Condiments.

Bert, Leonce.
A NEW GENERAL METHOD OF SYNTHESIS OF AROMATIC ALDEHYDES. [1963] 2p. 3 refs.
Order from SLA $1.10 63-18104

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1942, v. 215, p. 187-188 (pub. by Gauthier Villars et Cie., Paris).

DESCRIPTORS: *Aldehydes, *Benzenes, Chlorides, Synthesis (Chemistry).

Bert, Paul.
ON A NEW METHOD FOR PREPARATION OF ω-CHLOROALLYL AROMATIC HYDROCARBONS. [1963] 2p. 1 ref.
Order from SLA $1.10 63-18103

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1941, v. 213, p. 619-620 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Benzenes, *Chlorides, *Stilbenes, Propenes, *Allyl radicals, Hydrocarbons.

Bockmühl, M. and Ehrhart, G.
PROCESS FOR THE PREPARATION OF ARYLALKALI COMPOUNDS. [1963] 3p
Order from OTS or SLA $1.10 63-18518

Trans. of German patent 633,083, 27 Jul 36, by I. G. Farbenindustrie AG.

DESCRIPTORS: *Alkali metal compounds, *Phenyl radicals, *Sodium compounds, Chlorine compounds, Benzenes, Organic solvents, Synthesis (Chemistry) Chemical reactions

Bonnier, I. M. and Gaudemaris, G. de.
THERMAL STABILITY OF HYDROCARBONS. [1963] 37p
Order from K-H $37.00 K-H 12710

Trans. of Revue [de l]'Institut Français du Pétrole et Annales des Combustibles Liquides, 1962, v. 17, p. 852ff.

DESCRIPTORS: *Hydrocarbons, *Petroleum, Stability, Thermochemistry.

Chretien, André and Thomas, Albert
ON THE CATALYTIC SYNTHESIS OF HCN FROM METHANE AND AMMONIA. [1963] [6]p. 2 refs.
Order from SLA $1.10 63-18264

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1948, p. 354-357.

DESCRIPTORS: *Hydrocyanic acids, Synthesis (Chemistry), Catalysis, *Methanes, *Ammonia.

Danilov, S. N. and Lopatenok, A. A.
[ANHYDRO, DESOXY AND UNSATURATED DERIVATIVES OF POLYSACCHARIDES. III.] REACTION OF CYANOETHYL AND TOSYLXYLITAL UNDER THE CONDITIONS OF DESOXIDATION AND ANHYDRIDIZATION OF CELLULOSE. [26 Apr 63] [6]p. 6 refs.
Order from OTS or SLA $1.10 63-18381

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 11] p. 3611-3613.

DESCRIPTORS: *Polysaccharides, *Cellulose, Deoxidation, Anhydrides, Cyano radicals, Ethyl radicals, *Acrylonitriles, Tolyl radicals, Sulfonyl radicals, Xylose, Alcohols, *Piperidines, Benzyl tosylates.

Cyano ethoxy derivative of 2,4-3,5-dibenzylidene-D, L-xylitol was synthesized and partially desoxidized to give a crystalline 1-desoxy-2,4-3,5-dibenzylidene xylitol, obtained earlier by another method. The experiments described confirm the previous data from the synthesis of desoxy cellulose from cyano ethoxyl cellulose. It was found that the tosyl group of 1-tosyl-2,4-3,5-dibenzylidene xylitol is substituted by piperidine residue, but no desoxidation occurs. (Author)

Ernst, Otto and Lange, Heinrich.
PREPARATION OF CHLOROACETALDEHYDE SOLUTION. [1963] 2p
Order from OTS or SLA $1.10 63-18539

Trans. of German patent 496,062, announced 27 Mar 30, pub. 16 Apr 30, pat. from 23 Oct 27, by I. G. Farbenindustrie AG.

DESCRIPTORS: *Chlorides, *Acetaldehydes, Chlorine, *Vinyl chlorides, Solutions, Synthesis (Chemistry).

Franke.
NEW ACETYLENE REACTION. [1963] 2p.
Order from OTS or SLA $1.10 63-16047

Trans. of mono [Neue Acetylenreaktionen, n. p., Jan 43, 3p.] (PB-58987).

DESCRIPTORS: *Acetylenes, Carbonyl radicals, Aldehydes

Franzen, Volker, Schmidt, Hans-Jürgen, and Mertz, Christian.
INVESTIGATIONS INTO CARBENES. IX. CARBENES FROM SULFONIUM SALTS. [1962] 5p. (figs. omitted) 12 refs.
Order from SLA $1.10 62-16316

Trans. of Chem[ische] Ber[ichte] (West Germany) 1961, v. 94, p. 2942-[2950].

DESCRIPTORS: *Carbenes, *Sodium compounds, Alkyl radicals, Phenyl radicals, *Sulfonium radicals, Salts, Synthesis (Chemistry), Metalation, Elimination reactions, Sulfides, Cyclohexenes.

The preparation of alkyl-diphenyl-sulfonium slats is described. There occurs with trityl sodium an elimination that proceeds in part as an alpha elimination and in part according to the mechanism of beta elimination. Here the sulfonium compound acts as an alkylating medium. The ylid resulting from the alpha metallization can in certain cases disintegrate into diphenyl sulfide and carbene. The higher carbenes react but poorly with the double bond of the cyclohexene. (Author)

Freidlin, L. Kh. and Fridman, G. A.
CATALYTIC [SUBSTITUTION] OF HALOGEN BY A HYDROXYL IN THE AROMATIC SERIES. IV. VAPOR-PHASE HYDROLYSIS OF o- AND p-CHLOROPHENOLS AND o- AND p-DICHLOROBENZENES. [29 Oct 52] [19p] 14refs
Order from OTS or SLA $1.60 63-18674

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1949, no. 3, p. 317-325.

DESCRIPTORS: *Benzenes, *Chlorides, *Phenols, Hydroxyl radicals, Hydrolysis, Catalysis, Substitution reactions, Halogens, Insecticides.

The possibility of vapor-phase hydrolysis of o- and p-chlorophenols and o- and p-dichlorobenzenes was investigated and the influence of ring substituents is demonstrated. The catalytic character of the process is established. The catalytic action of silica gel, the promoting action of copper, and the influence of temperature are studied. (Author) (See also 61-18219)

Freidlin, L. Kh., Balandin, A. A. and others.
[CATALYTIC SUBSTITUTION OF A HALOGEN BY A HYDROXYL IN THE AROMATIC SERIES]. II. ACTIVATORS OF SILICA GEL. [1963] 18p. 10 refs.
Order from OTS or SLA $1.60 63-18681

Trans. of Akad[emiya] Nauk SSSR. [Otdelenie Khimicheskikh Nauk]. Izvestiya, 1945, no. 4, p. 375-384. Another trans. is available from OTS or SLA $1.10 as 61-18887 [1961] 8p.

DESCRIPTORS: *Halogens, *Hydroxyl radicals, *Silicon compounds, Dioxides, *Gels, Substitution reactions, *Benzenes, *Chlorides, Catalysis, Activity coefficient.

For abstract see Technical Translations 6:827, 1961.

Freidlin, L. Kh., Neimark, I. E., Fridman, G. A., and Sheinfain, R. Yu.
PROMOTING OF SILICA GELS OF DIFFERENT POROSITIES. [1963] 18p 6refs
Order from OTS or SLA $1.60 63-18676

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1951, no. 1, p. 86-94.

DESCRIPTORS: *Silicon compounds, Dioxides, *Gels, Porosity, Copper, Catalysis, Chemical reactions, Benzenes, Chlorides.

The influence of copper upon the catalytic properties of silica gels of various porosities was investigated. Apart from its promoting action, copper regenerates silica gel poisoned by mineral admixtures, enhances its thermal stability and selectivity, and overcomes the diffusional retardation of the reaction. (Author)

Freidlin, L. Kh., Neimark, I. E., Fridman, G. A., Sheinfain, R. Yu., and Khatset, F. I.
RELATION BETWEEN CHARACTER OF POROSITY OF SILICA GEL AND ITS CATALYTIC PROPERTIES. [1963] 21p 7refs
Order from OTS or SLA $2.60 63-18675

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1950, no. 5, p. 521-530.

DESCRIPTORS: *Silicon compounds, Dioxides, *Gels, Porosity, Catalysis, Chemical reactions, Benzenes, Chlorides.

The interrelations among the porous structure of silica gel, its catalytic activity, its specificity, and its thermal stability in the reaction of vapor-phase hydrolysis of chlorobenzene is investigated. (Author)

Fukui, K. and Kitano, H.
PREPARATION OF FREE AMINO ACIDS OR DERIVATIVES THEREOF. [1963] 3p.
Order from OTS or SLA $1.10 63-16694

Trans. of published Japanese patent 9459/56, filed 30 July 54, pub. 6 Nov 56, by Japan Chemical Fiber Institute.

DESCRIPTORS: *Amino acids, *Lysines, *Glycines, *Methionine, Synthesis (Chemistry).

The invention involves a process for preparation of free amino acids or derivatives thereof characterized in that a mineral acid salt of an acyclic amino acid or derivative thereof or a substance mainly comprising same and an alkali fluoride or a substance comprising same are reacted in a liquid medium. (Author)

Gol'dberg, K. M., Gel'fandbein, N. M., Falkovich, M. M., and Prilutskaya, N. V.
METHOD OF TRANSESTERIFICATION OF VEGETABLE OILS. [8 Aug 63] 2p
Order from OTS or SLA $1.10 63-20193

Trans. of USSR author's certificate no. 128,193, cl. 42 l, 3/04, appl. 22 Aug 59, pub. 28 Apr 60 (pub. in #Byulleten' Izobretenii (USSR) 1960, no. 9).
Another trans. is available from OTS or SLA $1.10 as 63-23780, 8 Aug 63, 2p.

DESCRIPTORS: *Vegetable oils, Glycerols, *Esterification, Alcohols, Chemical equilibrium, Electrical conductance.

The invention concerns a method of transesterification of vegetable oils by means of polyhydric alcohols at 220° C and higher temperatures, characterized in that--for the purpose of obtaining maximum yield of monoglycerides -- the reaction is carried out until an equilibrium is attained which is controlled according to the extreme point of an automatically drawn electroconductivity curve. (Author)

Hank, Rudolf.
THE SOLUBILITY OF REDOX POLYMERS OF ACROLEIN. [1963] [19p] 15refs
Order from SLA $1.60 63-20063

Trans. of Makromolekulare Chemie (Switzerland) 1962, v. 52 [18 Apr] p. 108-119.
Another trans. is available from SLA $1.60 as 62-18670 [1962] [13p].

DESCRIPTORS: *Acroleins, Solubility, Polymers, Oxidation-reduction reactions, Viscosity, Polymerization, Organic solvents, Acrylic resins.

Redox polymers of acrolein dissolve at elevated temperatures in highly polar solvents. No precipitations occur during cooling of the solutions to room temperatures. After displacement of the solvents by non-solvents or by evaporation, the polymers become insoluble again. Viscosity determinations of dissolved and reprecipitated polyacrolein samples show that the solution process can be related to a temperature- and time-dependent degradation. The infrared spectra of the dissolved and reprecipitated samples, compared to the original spectrum, of polyacrolein, show an increase of the C=O group content at the expense of the -C-O-C-linkages. The solutions are suitable for carrying out conversions with polyacroleins. (Author)

Ishii, Yoshio.
PREPARATION OF ALPHA GLYCOLS FROM OLEFINS BY PEROXIDE OXIDATION. [1963] 8p. 9 refs.
Order from SLA $1.10 63-18284

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1951, v. 54, p. 58-59.

DESCRIPTORS: *Glycols, Synthesis (Chemistry), *Ethylenes, *Propenes, *Butenes, *Pentenes, *Cyclohexenes, *Peroxides, Oxidation, Cyclohexanols, Carboxylic acids.

Preparation of alpha glycols from olefinic hydrocarbons via peracid oxidation was studied. Ethylene, isobutylene, and isoamylene yielded no glycol, and propylene gave only a small amount Butylene was easily oxidized. Oxidation of cyclohexene by Karo acid, peracetic acid, and ammonium persulfate. . gave no oxide in the product; trans-1, 2-cyclohexanediol was obtained. From hexadecene and octadecene, alpha glycols (m. p. 114-114.5°C., and 112.2-112.5°C. respectively) were obtained. These are new compounds; the structures were not determined. In addition to the above products, high boiling oxidation products (carboxylic acids) were found. (Author)

Janetzky, E. F. J., Verkade, P. E., and Lieste, J.
RESEARCH ON INDOLE DERIVATIVES. VI. THE REACTION BETWEEN MONOBROMOACETONE AND PRIMARY AND SECONDARY AROMATIC AMINES. [1963] 16p 19refs
Order from SLA $1.60 63-20270

Trans. of Rec[ueil des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1946, v. 65, p. 193-202.

DESCRIPTORS: *Indoles, *Acetones, *Amines, Bromides, Bromoacetic acids, Methyl radicals, Ethyl radicals, Anilines, Phenyl radicals, Chemical reactions, Synthesis (Chemistry).

The reaction between mono-bromoacetone and primary aromatic amines proceeds abnormally; it forms not the expected α-aryl amino ketone, but products of double molecular weight. With secondary aromatic amines, the reaction proceeds in the usual way. Particularly was the action of mono-methyl and monoethylaniline examined, whereby phenylmethylamino-propanone or phenylethylamino-propanone was obtained with very good yield. By heating with 1-1/2% their weight of zinc chloride these substances easily change over to 1,3-dimethylindole on 1-ethyl-3-methylindole. In these reactions we are dealing with a true ring closure. Starting from N-methyl-p-anisidine and monomethylaniline hydrochloride, 1,3-dimethyl-5-methoxyindole (physostigmolmethylether) could be obtained with very satisfactory yield. (Author)

Jaunin, Roland and Germano, Angelo.
CHLORINATION OF CYCLOHEXANE: A NEW ISOMER OF HEXACHLOROCYCLOHEXANE. [1963] 6p 7 refs
Order from SLA $1.10 63-18245

Trans. of Helvetica Chimica Acta (Switzerland) 1952, v. 35, p. 392-396.

DESCRIPTORS: *Cyclohexanes, *Chlorination, Chlorides, Synthesis (Chemistry), Chemical analysis, *Photochemistry, *Hexachlorocyclohexanes.

Kazanskii, B. A. and Rozengart, M. I.
POLYMERIZATION OF ISOBUTENE OVER ALUMINUM SILICATE AT DIFFERENT TEMPERATURES. [1962] [5]p. 12 refs.
Order from OTS or SLA $1.10 62-14123

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 1, p. 115-119.
Also available from OTS or SLA $2.60 in 61-20795 [1961] 25p.

DESCRIPTORS: *Butenes, *Aluminum compounds, *Silicates, *Catalysts, Temperature, Polymerization

Klosa, Josef.
PRODUCTION OF ODORLESS AND TASTELESS HEXACHLOROCYCLOHEXANE. [1963] 3p. 6 refs.
Order from SLA $1.10 63-18253

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1951, v. 6B, p. 49-50.

DESCRIPTORS: *Hexachlorocyclohexanes, Odors, Taste, Inhibition, *Pesticides, Toxicity.

Köster, R. and Larbig, W.
NEW METHODS OF PREPARING BORON-METHYL COMPOUNDS. 22 Dec 61, 2p. 4 refs
Order from SLA $1.10 63-10556

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 17/18, p. 620.

DESCRIPTORS: *Organoboranes, *Boron compounds, Methyl radicals, Synthesis (Chemistry).

Köster, R. and Rotermund, G.
SYNTHESIS OF ALKANETRIOLS VIA BORON HETEROCYCLES. 15 Nov 60, 2p. 3 refs.
Order from SLA $1.10 63-10563

Trans. of Angew[andte] Chem[ie] (West Germany) 1960, v. 72 [no. 15] p. 563.

DESCRIPTORS: *Alcohols, Synthesis (Chemistry), *Organoboranes, Oxidation, Hydrolysis, Alkanes

Kraus, M., Kochloefl, K., Setinek, K., Beranek, L., and Houda, M.
THE COURSE OF REARRANGEMENT OF POTASSIUM PHTHALATE INTO POTASSIUM TEREPHTHALATE. [1963] 20p (tables refs omitted)
Order from SLA $1.60 63-18854

Trans. of Chemicky Prumysl (Czechoslovakia) 1962, v. 12(37) no. 10, p. 529-534.

DESCRIPTORS: *Potassium compounds, *Phthalates, Chemical reactions, Benzene derivatives, Carboxylic acids, Salts, Decomposition, Reaction kinetics, *Polyester plastics, Production.

The rearrangement of potassium phthalate into potassium terephthalate is of industrial interest because it represents an alternate method to oxidation of p-xylene commonplace until now. The chemistry of this reaction was studied and it was found that the rearrangement is accomplished by means of intermediate steps; that is, the salts of other benzene carboxylic acids. The rearrangement of potassium benzoate and the reaction of potassium benzoate with potassium salts of benzene tricarboxylic acids have also the same characteristics. Further it was found that during the rearrangement through disintegration a small quantity of hydrogen-methane and benzene is formed. The disintegration reactions produce also potassium carbonates and dark colored substances. The influence of water on the yield of terephthalate and decomposition of individual potassium salts of benzene carboxylic acids in vacuum were also investigated. (Author)

Krebs, Otto.
CONTINUOUS EXTRACTION OF ANILINE WITH BENZENE FROM AQUEOUS SALT SOLUTIONS. [1963] 10p
Order from SLA $1.10 63-18551

Trans. of [Chemische Technik] (Germany) 1929 [v. 2] p. 407-408, 417-419.

DESCRIPTORS: *Anilines, *Benzenes, *Solvent extraction, Dyes, Phenyl radicals, Glycines, *Towers (Chemistry).

The paper makes a comparison of an intermittent and a continuous process for the recovery of aniline from phenyl glycine solution in a dye plant. The distillation unit with its accessories is first briefly described. Next is discussed a tower apparatus for the separation of liquid mixtures into two components which has found remarkable success in a great variety of applications. Benzene is used as an extraction solvent for the recovery of the aniline. It remains in the system and goes round and round. With the aid of a schematic diagram the benzol extraction is described and the mode of operation of the various parts of the unit, especially the extraction column, is shown. The data included supports the claims made for the process and is supposed to prove that the new process is technically and economically superior to the old distillation process. (Author)

Langenback, W., Losse, G., and Furst, H.
INVESTIGATIONS OF METHODS OF INCREASING THE GAMMA CONTENT OF CRUDE HEXACHLOROCYCLOHEXANE. [1963] 18p. 25 refs.
Order from SLA $1.60 63-18679

Trans. of Chem[ische] Tech[ik] (East Germany) 1952, v. 4, no. 6, p. 247-251.

DESCRIPTORS: *Hexachlorocyclohexanes, *Gammexane, Insecticides, Chemical reactions, Additives, Molecular isomerism, Benzenes, Chlorination, Hydrocarbons.

Levitskaya, K. V., Pastukhov, P. T., and Danilov, S. N.
[CHEMISTRY OF VISCOSES AND XANTHOGENATES. XI]. THE EFFECT OF OXIDIZING AND REDUCING ADDITIONS TO VISCOSE ON ITS PROPERTIES [Khimiya Viskozy i Ksantogenatov. XI]. [27 May 63] [11]p. 13 refs.
Order from OTS or SLA $1.60 63-18379

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1960, v. 33, no. 4, p. 896-902.

DESCRIPTORS: *Cellulose chemistry, *Viscose, Polymerization, Oxidation, Reduction, Additives, Xanthic acids, Sodium compounds, *Hypochlorites, *Peroxides, *Sulfites, Sulfates, Physical properties, Viscosity, Coagulation, Xanthogenates.

On adding sodium hypochlorite to the prepared viscose immediately after dissolution of the xanthate, the amount of titratable sulfur decreases mainly at the expense of xanthate sulfur (in proportion to viscose ripening); the polymer grows more rapidly than without addition of the oxidizing agent, which obviously causes the formation of cellulose dixanthides, splitting easily in alkaline medium and accelerating thereby the ripening process. The addition of persulfates to the mercerization liquor reduces considerably the viscosity of the viscose obtained. Addition of 5% sodium peroxide (based on the weight of α-cellulose), before or immediately after dissolution of the xanthate, increases the degree of ripening and the viscosity, but decreases the total amount of titratable sulfur. Treatment of the viscose at various stages of preparation with oxygen changes the properties of the viscose obtained, especially at the stages from the mercerization to dissolution of the xanthate. Addition of sulfide (1.5% of the weight of α-cellulose in alkali cellulose before xanthation) increases the xanthate sulfur in the viscose, decreases its viscosity, and retards its coagulation. (Author) (See also 61-16787)

Linden, T. van der.
BENZENE HEXACHLORIDES AND THEIR DECOMPOSITION INTO TRICHLORBENZENES. [1963] [26p] 24refs
Order from SLA $2.60 63-18230

Trans. of [Chemische] Berichte (Germany) [1912] v. 45, p. 231-247.
Another trans. is available from SLA $1.60 as 63-14388 [1963] 15.

DESCRIPTORS: *Hexachlorocyclohexanes, Cyclohexanes, Synthesis (Chemistry), Decomposition, *Benzenes, *Chlorides, Chemical analysis, *Insecticides.

Menozzi, A. and Appiani, G.
CERTAIN GLUTAMIC ACID DERIVATIVES: PYROGLUTAMIC ACIDS AND ACTIVE PYROGLUTAMIDES. [1963] 5p.
Order from SLA $1.10 63-16088

Partial trans. of [Accademia Nazionale dei Lincei. Classe di Scienze Fiziche, Matematiche e Naturali]. Rendiconti (Italy) 1893 [ser. 5] v. 2, p. 415-423.

DESCRIPTORS: *Glutamic acid, *Amides, Esters, Chemical reactions.

Meshcheryakov, A. P.
POLYMERIZATION OF OLEFINS OF DIFFERENT STRUCTURE UNDER THE ACTION OF ALUMINUM CHLORIDE. I. [1962] 4p. 16 refs.
Order from OTS or SLA $1.10 62-14127

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 1, p. 157-165.
Also available from OTS or SLA $2.60 in 61-20795 [1961] 25p.

DESCRIPTORS: *Ethylenes, Polymers, Polymerization, *Aluminum compounds, *Chlorides, Catalysis, Molecular structure, Dienes, Substitution reactions, Oils, Viscosity, Molecular weight

Michaelis, A. and Becker, P.
ON MONOPHENYL BORON CHLORIDE AND THE VALENCE OF BORON. [1963] 3p
Order from SLA $1.10 63-18176

Trans. of [Chemische] Berichte (Germany) 1880, v. 13, p. 58-61.

DESCRIPTORS: *Borines, Phenyl radicals, Boron compounds, *Chlorides, Synthesis (Chemistry), *Boron, *Valence.

Mittasch, A.
IRON CARBONYL AND CARBONYL IRON. [1963] 19p. 41 refs.
Order from SLA $1.60 63-18124

Trans. of Angew[andte] (Germany) 1928 [v. 41] no. 30, p. 827-833
Another trans. is available from SLA as 58-1239, 30p.

DESCRIPTORS: *Iron compounds, *Carbonyl radicals, Physical properties, Antiknock, Chemical properties, Reaction kinetics, Synthesis (Chemistry).

Motoki, Shinichi and Odaka, Takatoski.
SYNTHESIS OF GLUTAMIC ACID FROM LEVULINIC ACID. [1963] 4p. 8 refs.
Order from SLA $1.10 63-16077

Trans. of [Nihon Kagaku Zasshi (Japan) 1956, v. 77, p. 401-402].

DESCRIPTORS: *Glutamic acid, Glutaric acids, Chemical reactions, Synthesis (Chemistry)

For abstract see Chemical Abstracts 52: 257, 1958.

Natta, G., Ercoli, R., and Calderazzo, F.
SYNTHESIS OF AROMATIC-CHROMIUM-TRICARBONYL COMPOUNDS [Sintesi di Arene-Cromo-Tricarbonili]. [1963] 10p
Order from K-H $10.00 K-H 8254

Trans. of la Chimica e l'Industria (Italy) 1958, v. 40, no. 4, p. 287-289.
Another trans. is available from SLA mi$1.80, ph$1.80 as 61-10700 [1961] 9p.

DESCRIPTORS: *Metalorganic compounds, Synthesis (Chemistry), Benzen derivatives, *Chromium compounds, *Carbonyl radicals, *Benzenes, *Toluenes, *Xylenes, *Naphthalenes, *Benzoates.

For abstract see Technical Translations 5: 546, 1961.

Niemann.
STATUS OF THE REPPE PROCESS. [1963] 7p.
Order from OTS or SLA $1.10 63-16046

Trans. of German mono. Stand des Reppe-Verfahrons, n.p., Apr 40. (PB 50458)

DESCRIPTORS: *Butadienes, *Butanols, Acetylenes, Formaldehyde, Stability, Catalysts, Hydrogenation.

Novikov, I. N., Antonova, A. M., Zhilina, R. I. and others.
SYNTHESIS AND AUTOOXIDATION OF ISOPROPYLCYCLOHEXYLBENZENE. [1963] [5p] 3refs
Order from OTS or SLA $1.10 63-20204

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 9] p. 2954-2957.

DESCRIPTORS: *Benzenes, Alkylation, Cyclohexanols, Sulfuric acid, Hydroperoxides, Oxidation, Synthesis (Chemistry).

It was shown that cycloalkylation of isopropylbenzene by cyclohexanol in presence of sulfuric acid can give isopropylcyclohexylbenzene in 81% yield. The product represents a mixture of all three isomers with predominence of p-isopropylcyclohexylbenzene. The p-isopropylcyclohexylbenzene is easily oxidated by air-oxygen to mono- and dihydroxyperoxides, from which dimethyl-p-cyclohexylbenzyl-hydroperoxide and p-isopropylcyclohexylbenzene-dihydroperoxide were isolated in pure state. (Author)

Oddo, Giuseppe and Calderaro, Emanuele.
MAGNESYLAMINE. [22 May 63] 14p. 11 refs.
Order from SLA $1.60 63-18333

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1923, v. 53, p. 64-74.

DESCRIPTORS: *Magnesium compounds, *Amines, *Halides, Grignard reagents, Metalorganic compounds, Chemical reactions.

Oliveri-Mandala, E.
EFFECT OF HYDRAZOIC ACID ON METHYLCARBYLAMINE. SYNTHESIS OF TETRAZOLE HOMOLOGS. [1963] [5p] 3refs
Order from SLA $1.10 63-18949

Trans. of Accad[emia Nazionale dei] Lincei. [Classe de Scienze Fiziche, Matematiche e Naturali. Rendiconti (Italy) 1910, ser. 5, v. 19, no. 1, p. 228-231.

DESCRIPTORS: *Azoles, Synthesis (Chemistry), *Nitriles, Methyl radicals, Hydrogen compounds *Azides

Orthner, L.
THE INTRODUCTION OF SULFO-GROUPS INTO ALKANES BY MEANS OF SULFUR DIOXIDE AND OXYGEN (SULFOXIDATION). [1963] [12p] 22refs
Order from SLA $1.60 63-18224

Trans. of Angew[andte] Chem[ie] (West Germany) 1950, v. 62, p. 302-305.

DESCRIPTORS: *Alkanes, *Oxidation, *Sulfonation, *Sulfur compounds, Dioxides, *Oxygen, Acetic anhydrides, Towers (Chemistry).

For the "sulfoxidation" of organic compounds, especially paraffins, the "water-light process" and the "acetic anhydride process" were developed into useful, continuous working procedures. It proved possible to chart the course of these reactions. (Author)

Panov, E. M. and Kocheshkov, K. A.
ON A NEW FUNDAMENTAL CLASS OF THE SIMPLEST ORGANIC COMPOUNDS OF LEAD $ArPbX_3$. [1963] 7p
Order from K-H $7.00 K-H 10179

Trans. from Akademiya Nauk SSSR. Doklady, 1952, v. 85, no. 5.

DESCRIPTORS: *Lead compounds, *Metalorganic compounds, Halides.

Plyusnin, V. G. and Sukhorosova, T. I.
ETHYLATION OF BENZENE. [1963] [26p] 9refs
Order from OTS or SLA $2.60 63-20198

Trans. of Akademiya Nauk SSSR. Ural'skii Filial [Sverdlovsk]. Institut Khimii. Trudy, 1960, no. 4, p. 21-32.

DESCRIPTORS: *Benzenes, *Alkylation, *Ethylenes, Ethyl radicals, Chemical reactions, Quantitative analysis.

Polyanskii, N. G., Markevich, S. M. and others.
THE SELECTIVE EXTRACTION OF ISOAMYLENES FROM HYDROCARBON MIXTURES. [1963] [8]p. 12 refs.
Order from OTS or SLA $1.10 63-18750

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 2]. p. 164-169.

DESCRIPTORS: Pentanes, *Methyl radicals, *Butenes, Alcohols, Petroleum, Ion exchange resins, Hydrocarbons, Mixtures.

It was found that only the tertiary amylenes, of all C_5-olefins in pentane-amylenic fraction, are hydrated in the presence of H-cation exchanging resin KU-2 at 75 C. Under dynamic conditions, the conversions of amylenes per pass were unaffected by water addition to the catalyst. T.-amylic alcohol could be produced at any dilution of the t.-amylenes on the ion-exchanger by other hydrocarbons; then it could be again dehydrated to a mixture of 2-methylbutene-2 and 2-methylbutene-1, free from other additives. On the basis of results of chromatographic analyses of the catalyzates, the assumption was made for the first time that H-caton exchangers catalyze the isomerization of tertiary olefins. (Author)

Portnaya, B. S., Bobkova, T. P., Krasheninnikova, M. V., Chel'tsov, V. S., and Levkoev, I. I.
INVESTIGATIONS IN THE FIELD OF AZOMETHINE DYES. IV. INDOANILINE DYES, DERIVATIVES OF THE AMIDES OF 1,2-OXYNAPHTHOIC ACID, CONTAINING HETEROCYCLIC RESIDUES AT THE AMIDE NITROGEN. [1963] [27p] 10refs
Order from OTS or SLA $2.60 63-18532

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Kinofotoinstitut. Trudy (USSR) 1960, no. 40, p. 106-118

DESCRIPTORS: *Dyes, *Amides, *Anilines, Nitrogen compounds, Azoles, Methyl radicals, Benzyl radicals, Chemical reactions, Synthesis (Chemistry).

A number of amides of 1, 2-oxynaphthoic acid, containing thiazole and benzthiazole residues at the amide nitrogen, were synthesized. The photographic properties of the color-components synthesized and the absorption-spectra in alcohol solution and in a gelatine layer of the indoaniline dyes made from them were studied. It was that substitution of a hydrogen atom of the amide group of the p-diethylaminoanil of the amide of 1,4-naphthoquinone-4-carbonic acid by a thiazole or benzthiazole residue brings about a considerable deepening of the color, whereupon the magnitude of the bathochromic shift depends on the position of the cyclic nitrogen atom and the substituents in the hetero-residues in relation to the basic chromophoric system of the dye. Substitution of a hydrogen atom of the amide group in a dye derived from the benzthiazolyl-5' -amide of 1,2-oxynaphthoic acid by a methyl group results, as in other cases, in a considerable hypsochromic shift of the absorption-maximum in connection with the disruption of the intramolecular hydrogen-bond. (Author)

Roelen, Otto.
ON THE ALDEHYDE REACTION OF OLEFINS WITH CARBON MONOXIDE AND HYDROGEN AND RELATED REACTIONS. [1963] 40p.
Order from SLA $3.60 63-18687

Trans. of mono. (lecture) delivered before the general meeting of the Society of German Chemists, Cologne, 28 Sep 51.

DESCRIPTORS: *Ethylenes, *Aldehydes, *Monoxides, *Carbon compounds, *Hydrogen, Butenes, Alcohols, Carbonyl radicals, Catalysts, Chemical industry.

Rosnati, L.
THE THIOESTERS OF THE THIOPHOSPHORIC ACI ACIDS. [1963] 11p 8refs
Order from SLA $1.60 63-18992

Trans. of Gazzetta Chimica Italiana, 1946, v. 76, p. 272-282.

DESCRIPTORS: *Phosphoric acids, Thio radicals, Esters, *Phosphates, *Thiols, Phenols, Cresyl radicals, Benzyl radicals, Synthesis (Chemistry), *Phosphorus compounds (Organic)

The reaction between P_2S_5 and thiophenols (and mercaptans) was studied. Two reaction products are found: The trithioarylthiophosphate, $PS(SR)_3$, and the thioarylthiometaphosphate, PS_2SR. No trace of triester can be converted to the metaphosphates by heating with P_2S_5. Conversely, the trithioester can be obtained from the thiometaphosphate by treatment with thiophenol. On heating the thiometaphosphates with phenol, the acid 0,0'-diaryldithiophosphoric esters are obtained by splitting out thiophenol. (Author)

Scheuing, Georg and Vogelbach, Curt.
γ - AND ∫-HEPTACHLOROCYCLOHEXANE, THE ODORIFEROUS COMPONENTS OF TECHNICAL HEXACHLOROCYCLOHEXANE. [1963] 3p [refs omitted].
Order from SLA $1.10 63-18234

Trans. of Naturwissenschaften (West Germany) 1950, v. 37, p. 211-212.

DESCRIPTORS: *Hexachlorocyclohexanes, Odors, Cyclohexanes, Chlorides, *Insecticides

Schmidt, Otto and Bauer, Karl.
PROCESS FOR HYDROGENATION AND PURIFICATION OF AROMATIC HYDROCARBONS AND THEIR DERIVATIVES. [1963] [6p]
Order from OTS or SLA $1.10 63-18240

Trans. of German patent application I 31, 568 IVa/12 o 4. 25 Lu, filed 30 Jun 27, explained 26 Feb 31, objections until 26 Apr 31, by I. B. Farbenindustrie AG.

DESCRIPTORS: *Benzenes, *Benzene derivatives, *Hydrogenation, *Purification, *Naphthalenes, Desulfurization, Catalysis.

Slotta, H. K. and Lorenz, L.
CONCERNING ISOCYANATES. I. SYNTHESIS OF ALIPHATIC ISOCYANATES. [1963] 7p 10refs
Order from SLA $1.10 63-18233

Trans. of [Chemische] Berichte (Germany) 1925, v. 58, p. 1320-1323.

DESCRIPTORS: *Isocyanates, Methy radicals, Ethyl radicals, Propyl radicals, Aliphatic compounds, Synthesis (Chemistry), Potassium compounds, Cyanates, Alkyl radicals, Sulfates.

Solerio, Adriano.
ON THE STANNONES: DILAURYLSTANNONE. [1963] 6p
Order from K-H $6.00 K-H-11001

Trans. of Gazzetta Chimica Italiana, 1951, v. 81, p. 664-667.

DESCRIPTORS: *Tin compounds, Laurates

Stetter, Hermann and Goebel, Peter.
COMPOUNDS WITH THE UROTROPIN STRUCTURE. XXVI. A CONTRIBUTION TO THE PROBLEM OF THE REACTIVITY OF CARBONIUM IONS AT THE END OF A BRIDGE. [1963] 14p 8refs
Order from SLA $1.60 63-18853

Trans. of Chemische Berichte (West Germany) 1963, v. 96, [no. 2] p. 550-555.

DESCRIPTORS: *Polycyclic compounds, *Amines, Methyl radicals, *Halides, Synthesis (Chemistry), Alcohols, Carbon, Ions, Reaction kinetics, *Solvent action, Molecular structure.

3-Hydroxy-tricyclo (4, 3, 1, $1^{3,8}$) undecan was synthesized from 1-aminomethyl-adamantan by expansion of the ring according to the method fo Demjanow. The solvolysis constants of the 3-halo-tricyclo (4, 3, 1, $1^{3,8}$) undecans obtained from this were measured and compared with those of the corresponding 1-halo-adamantans. This showed that the reaction velocity of the former is approximately 400 times as high. The significance of this finding for the theory of the reactivity of compounds with halogen substitution at the a-carbon atom is discussed. (Author)

Tepenitsyna, E. P., Dorogova, N. K., and Farberov, M. I.
STUDY ON THE REACTION OF SELECTIVE OLIGOMERIZATION OF BUTADIENE TO CYCLODODECATRIENE. [1963] [10p] 16refs
Order from OTS or SLA $1.10 63-20210

Trans. of Neftekhimiya (USSR) 1962, v. 2, no. 4, p. 604-610.

DESCRIPTORS: *Butadienes, Chemical reactions, *Cyclododecatriene, Ziegler catalysts.

A series of catalytic systems for cyclododecatriene (CDT) production was investigated and three systems were the most active: $Al(C_2H_5)_2Cl + TiCl_4$; $Al(C_2H_5)_3 + CrCl_3$; $Al(i\text{-}C_4H_9)_3 + CrCl_3$. All three had high stereospecificity, forming only one of the two CDT forms, as a function of the second component in the catalyst, of the compound with the metal, changing its valency. The optimal conditions of CDT production on all three systems are determined. (Author)

Thelen, V., reviewer.
THE PREPARATION OF PENTACHLOROPHENOL. [1963] [8p] 8refs
Order from SLA $1.10 63-18242

Trans. from mono. Scientific Zetkozust, issued by I. G. Farbenindustrie A.G. Werk, Ürdingen, 1941.

DESCRIPTORS: *Phenols, *Chlorides, *Preservation, *Anilines, *Benzenes, Chlorination, Wood.

Tishchenko, D. and Uvarov, I.
SYNTHESIS OF ARTIFICIAL TANNINS OF THE TYPE OF SULFONATED NOVOLAQUERS. [1963] 11p. 8 refs.
Order from OTS or SLA $1.60 63-18402

Trans. of #Zhur[nal] Prikladnoi Khim[ii] (USSR) 1957, v. 30 [no. 1] p. 104-114.

DESCRIPTORS: *Tannic acids, Synthesis (Chemistry), Physical properties, *Phenol-formaldehyde resins, *Sulfonates.

Trillat, M. A.
ABOUT CHLORAL FROM THE INDUSTRIAL POINT OF VIEW. [1963] 6p
Order from SLA $1.10 63-18573

Trans. of Société Chimique de France. Bulletin [1897] ser. 3, v. 17, p. 230-234.

DESCRIPTORS: *Chlorides, *Alcohols, *Hydrates, Aldehydes, *Acetaldehydes, Crystallization, Chemical properties.

Troitskii, M. V. and Voronina, A.
PENTACHLOROPHENOL. [1963] 5p 3refs
Order from OTS or SLA $1.10 63-18977

Trans. of Promyshlennost' Organicheskoi Khimii (USSR) 1940, v. 7, p. 240-241.

DESCRIPTORS: *Phenols, *Chlorides, Synthesis (Chemistry), *Germicides.

Tsyskovskii, V. K., Bocharov, A. A., and Sasin, E. M.
SYNTHESIS OF OXY ACIDS AND THEIR DERIVATIVES BY CONTINUOUS OXIDATION OF LIQUID PARAFFINS. [1963] 5p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 63-16233

Trans. of [Khimicheskaya Promyshlennost' (USSR) 1960, no. 8, p. 642-643].

DESCRIPTORS: *Organic acids, Oxidation, Synthesis (Chemistry), Oxides, Carboxylic acids, Ketones

Vincent, Camille.
METHYLATION OF PHENOLS. [1963] 2p.
Order from SLA $1.10 63-14233

Trans. of Soc[iété] Chim[ique de] France. Bull[etin, 1926, ser. 4] v. 40, p. 106-107.

DESCRIPTORS: *Phenols, Anisole.

[Wassenegger].
ON THE PREPARATION OF m-DICHLOROBENZENE [Über die Darstellung von m-Dichlorbenzol]. [1963] 3p
Order from OTS or SLA $1.10 63-18542

Trans. of mono. issued by I. G. Frabenindustrie A.G., Wolfen, 2 Apr 35 (PB 75376).

DESCRIPTORS: *Benzenes, *Chlorides, Sulfonyl radicals, Synthesis (Chemistry)

Weber, A. and Wolff, N.
PERCHLOROPHENOL FROM PERCHLOROBENZENE. [1963] 2p
Order from SLA $1.10 63-18241

Partial trans. (p. 335-336) of [Chemische] Ber[ichte] 1885, v. 18, p. 335-[337].

DESCRIPTORS: *Phenols, *Chlorides, Synthesis (Chemistry) *Benzenes.

Wiberg, E. and Johannsen, Th.
A VOLATILE GALLIUM HYDRIDE OF THE FORMULA Ga_2H_6 AND ITS TETRAMETHYL DERIVATIVE. [1963] 5p. (refs. omitted).
Order from SLA $1.10 63-16799

Trans. of [die] Naturwissenschaften (Germany) 1941 [v. 29] no. 21, p. 320ff.

DESCRIPTORS: *Gallium compounds, Aluminum compounds, Hydrides, Methyl radicals, *Metalorganic compounds, Synthesis (Chemistry), Chemical properties, Electrochemistry

The document also contains a brief abstract of: Metallic precipitates at the negative pole of a galvanic battery, R. L. Ruhland, Schweigger's Journal 15, 411-18, 1815; and a lengthy abstract of: A non-volatile, polymeric aluminum hydride $(AlH_3)_x$ and some volatile compounds of monomeric AlH_3. O. Stecher and E. Wiberg. Ber. 75: 2003-12, 1942.

Yamaki, Kiyoshi.
INTERACTION BETWEEN IONIC DYESTUFFS OF OPPOSITE ELECTRIC CHARGES. [1963] 10p (figs. tables omitted) 6refs
Order from SLA $1.10 63-18514

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1962, v. 65 [no. 11] p. 1861-1865.

DESCRIPTORS: *Dyes, *Chemical reactions, Ions, *Methylene blue, Methanes, Complex compounds, Vinyl chlorides, Surface-active substances, Surface tension, Absorption spectrum, Chemical bonds, Fibers (Synthetic).

The aqueous solutions of ionic dyestuffs of opposite electric charges, orange II (anion and methylene blue (cation), were mixed. To examine the interaction which then takes place between these dyestuffs, the specific electric conductivity was measured. The results of the measurement indicate that a complex is produced in the molar ratio of 1 : 1. The equilibrium constant and the thermodynamic values were computed and compared with those of the case where a dyestuff and a surface active agent are employed. Where dichloroethane coexists with the aqueous solutions of the two dyestuffs which were mixed in various ratios, the visible-part absorption spectrum of both water and oil phases were measured. Then it was ascertained that a complex similar to the above stated one is produced and the each dyestuff, concurrently, becomes hydrophobic and dissolves into an oil phase. The results of these experiments are discussed in connection with the dyeing mechanism of vinyl fibers. (Author)

Zimakov, P. V.
SELECTIVITY IN THE CATALYTIC OXIDATION OF ETHYLENE TO ETHYLENE OXIDE. [1963] [25p] 46refs
Order from OTS or SLA $2.60 63-20012

Trans. of Uspekhi Khimii (USSR) 1959, v. 28, no. 11, p. 1342-1352.

DESCRIPTORS: *Ethylenes, *Oxides, Oxidation, Catalysis, Silver catalysts, Metal poisoning, *Epoxides.

Physical Chemistry

PROCEDURE FOR THE PRODUCTION OF A VERY FINE MINERAL GRIT OF OXIDES AND INSTALLATION TO PUT THIS PROCEDURE INTO OPERATION. [1962] 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-16389

Trans. of French patent application, by the Solumenta Co., appl. 26 May 55, registered 31 Oct 58.

DESCRIPTORS: *Minerals, *Oxides, *Silicon compounds, Sand, Production, Installation, Particle size.

Abramov, G. A.
DEHYDRATION OF THE DIHYDRATE OF MAGNESIUM CHLORIDE. [1963] [19]p. 6 refs.
Order from OTS or SLA $1.60 63-18111

Trans. of Metallurg, Leningrad (USSR) 1933, v. 8, no. 3, p. 11-19.

DESCRIPTORS: Dehydration, *Magnesium compounds, *Chlorides, *Laboratory furnaces, Dehydrators, Hydrates, Chlorine, Operation.

Achumow, E. I. and Wassiliew, B. B.
ELECTROLYSIS OF SODIUM CHLORIDE IN FLUID AMMONIA, REPT. I. [1963] 10p (figs tables omitted) 16refs
Order from SLA $1.10 63-20137

Trans. of Z[eitschrift für] Elektrochem[ie] (Germany) 1935, v. 41, no. 2, p. 96-101.

DESCRIPTORS: *Electrolysis, *Electrochemistry, *Sodium compounds, *Chlorides, *Ammonia, Liquefied gases, Solubility, Vapor pressure, Electrical conductance, Electric potential.

Alekseev, N. N.
ON THE DETERMINATION OF THE POTENTIAL OF MOISTURE TRANSMISSION IN TOBACCO. [1963] 10p 8refs
Order from OTS or SLA $1.10 63-20135

Trans. of Izv[estiya] Vys[shikh] Ucheb[nykh] Zav[edenii]. Pishch[evaya] Tekh[nologiya] (USSR) 1962, no. 4, p. 144-149.

DESCRIPTORS: Mathematical analysis, *Moisture, *Tobacco, *Hygrothermagraphs.

It was found that the equilibrium partial water vapour pressure can be used as the potential of moisture transmission in capillary-porous colloidal materials in the hygroscopic region. The principles of the sorptional hysteresis are stated. A universal diagram of state of moist tobacco is proposed. (Author)

Aliev, V. S., Efimova, S. A. and others.
ACTIVITY EVALUATION OF THE CATALYSTS, APPLIED IN INDUSTRIAL PROCESSES WITH CIRCULATING, POWDERED CATALYSTS. [1963] [6]p.
Order from OTS or SLA $1.10 63-18832

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 4, p. 545-549.

DESCRIPTORS: *Catalysts, *Activity coefficient, *Chromium catalysts, *Aluminum, Powder metals, Decomposition, Petroleum.

A laboratory method is recommended for the evaluation of catalytic activity of powdered cracking catalysts. It consists of standard raw-material cracking at a standard course in a reactor with "boiling" layer. The linear rate of vapors, reported to the free section, is 0.06 m./sec. During evaluation of activity of the dehydrogenating alumina-cheomia catalyst, the linear gas rate is preferably increased to 0.15 was modified in connection with the change in the course of gas contacting with the powdered catalyst, according to four diagrams given. (Author)

Antropoff, A. v. and Sommer, W.
THE SPACE DIAGRAM OF THE TERNARY SYSTEM NaOH-NaCl-H_2O. Thesis, Institute of Technology, Karlsruhe, 1925. [1963] 40p. (figs. omitted) 36 refs.
Order from SLA $3.60 63-18135

Trans. of Zeitschr[ift] f[ür] Physik[alische] Chemie [Leipzig] (Germany) 1926, v. 123, p. 161-198.

DESCRIPTORS: *Sodium compounds, *Hydroxides, *Chlorides, Water, *Phase studies, Fused materials.

Artyukhov, I. M.
METHOD OF TREATMENT OF EXPERIMENTAL DATA IN MODELLING OF HETEROGENEOUS PROCESSES FOR CHEMICAL CONVERSION OF SUBSTANCE (DISCUSSION). [1963] [8p] 5refs
Order from OTS or SLA $1.10 63-20256

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 12, p. 53-57.

DESCRIPTORS: *Hydrocarbons, *Pyrolysis, Catalysts, Reduction (Chemistry), Oxidation, Experimental data, Heat transfer, Reaction kinetics.

A new method is proposed for treatment of experimental data with the goal of modelling reaction dispositives based on the proportionality between substance conversion and the heat transfer on catalyst grain surface. It is shown, that conversion degree can be determined from conversion number by the numbers of heat-and mass-transfer and also by the simplexes, characterizing the geometric, temperature and concentration singularities of the system. It is stated, that catalytic qualities and chemical specificity of a system can be expressed through corresponding simplexes without analysis of differential equations and of dimensions, determining the physicochemical values. Equations are derived for calculation of conversion degree and of substance quantity conversed per volume unit of catalyst and per time unity, and also for modelling of heterogeneous chemical systems. (Author)

Avramenko, L. I., Gerber, M. I., Neiman, M. B., and Shushunov, V. A.
A KINETIC METHOD OF PHYSICO-CHEMICAL ANDLYSIS. I. KINETICS OF REACTION BETWEEN LEAD-SODIUM ALLOYS AND ETHYL CHLORIDE VAPORS. [1963] [30p] (3 figs. omitted) 15refs
Order from OTS or SLA $2.60 63-18238

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1946, v. 20, no. 11, p. 1347-1358.

DESCRIPTORS: *Reaction kinetics, *Lead alloys, *Sodium alloys, *Ethyl radicals, *Chlorides, Vapors, Catalysis

Batashov, K. P.
ELECTRICAL CONDUCTIVITY OF MIXTURES OF MOLTEN CHLORIDES OF SODIUM, POTASSIUM AND MAGNESIUM [Elektroprovodnost' Smesei Rasplavlennykh Khloristykh Solei Natriya, Kaliya i Magniya]. [1963] 33p. 24 refs.
Order from OTS or SLA $3.60 63-18136

Trans. of Metallurg [Leningrad] (USSR) 1935, v. 10, no. 7, p. 100-113.
Another trans. is available from SLA as RT-2145, 39p.

DESCRIPTORS: *Electrical conductance, *Chlorides, *Sodium compounds, *Potassium compounds, *Magnesium compounds, Mixtures, Fused materials.

Bot, Jacques le.
DIELECTRIC STUDY OF ALUMINA SAMPLES. [1963] 6p. 4 refs.
Order from SLA $1.10 63-18738

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1962, v. 255, p. 2247-2249 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Aluminum compounds, Oxides, *Hydrates, *Band spectrum, Dipole moments, Heat of activation, *Minerals, *Absorbants, Gels, Cements, Dielectrics.

The water bands of hydrargillite, pseudo-boehmite, boehmite, gamma gel U_1, and activated alumina S_1 were studied by means of Hertzian spectroscopy (100 cps to 100 Kcps). It was found that hydrargillite and pseudo-boehmite did not exibit dipolar relaxation and that the relaxation shown by boehmite was not due to the small amount of water absorbed by the sample. In the activated aluminas (U_1, S_1), the dipolar relaxation bands were directly linked to the amount of water

absorbed, as was demonstrated by the disappearance of the bands upon dehydration. It is proposed that the latter bands are identical with those shown by aluminous cement during hydration.

Bukhanaeva, F. M., Pecherskaya, Yu. I. and others.
INVESTIGATION BY THE METHOD ESR ON THE NATURE OF THE ACTIVE COMPONENT IN CHROMIUM OXIDE POLYMERIZATION CATALYSTS. [1963] 8p. 15 refs.
Order from OTS or SLA $1.10 63-18406

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 3, p. 358-363.

DESCRIPTORS: Polyethylene plastics, *Ethylenes, Polymerization, *Catalysis, *Chromium catalysts, *Alumina-silica catalysts, Ions, *Spectroscopy, Absorption spectrum, *Electron spin resonance.

A comparison of the catalytic activity of chromiaaluminosilicate catalysts for ethylene polymerization was made by their ESR spectra. It was found, that the catalytic activity is not connected with intermediate chromium oxides and the presence of hexavalent chromium, but it is caused through the ions Cr^{5}, stabilized on the carrier surface. (Author)

Chovnyk, N. G.
ON THE QUESTION CONCERNING THE MEASUREMENT OF THE DECOMPOSITION POTENTIAL OF FUSED ELECTROLYTES IN PRESENCE GLASS DIAPHRAGMS [K Voprosu ob Izmerenii Napryazheniya Razlozheniya Rasplavlennykh Elektrolitov v Prisutstvii Steklyannykh Diafragm]. [1963] [21p] (figs omitted) 12 refs
Order from OTS or SLA $2.60 63-18991

Trans. of Zhurnal Fiz[icheskoi] Khim[ii] (USSR) 1949, v. 23 [no. 7] p. 839-848.
Another trans. is available from SLA as RT-3436, 17p.

DESCRIPTORS: *Fused materials, Decomposition, *Electrolysis, Diaphragms (Mechanics) *Glass, *Electrolytes, Electrodes, Separation, Electrolytic cells.

Degobert, P. and Bloch, O.
FUSED ALKALINE CARBONATES WHICH CAN BE USED AS ELECTROLYTES FOR FUEL CELLS: METALS THAT CAN BE USED AS ELECTRODES. 30 Jul 63, [17p] 21refs
Order from SLA $1.60 63-20189

Trans. of Société Chimique de France. Bulletin, 1962 [no. 10] p. 1887-1892.

DESCRIPTORS: *Electrodes, Metals, *Fuel cells, Electrolytes, *Carbonates, Fused materials, Calcite, Alkaline earth compounds.

An attempt is made to establish a rational choice of the different metals which can be used as electrodes by an analysis of the current potential curves traced for electrodes of simple geometry in a bath of fused alkaline carbonates, using hydrogen as fuel. From this analysis it is possible to class the metals according to their oxidation potential and to their catalytic activity in the oxidation of hydrogen and the reduction of oxygen. (Author)

Delimarskii, Yu. K., Skobets, E. M., and Berenblyum, L. S.
POLAROGRAPHIC DETERMINATION OF THE DECOMPOSITION POTENTIALS OF METAL CHLORIDES IN FUSED $AlCl_3$-NaCl AS SOLVENT. [1963] [20p]
Order from OTS or SLA $1.60 63-18988

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1948, v. 22 [no. 9] p. 1108-1115.
Another trans. is available from SLA as R-00410, 9p.

DESCRIPTORS: Solvents, *Chlorides, *Sodium compounds, *Aluminum compounds, *Fused materials, Metals, *Decomposition, Polarographic analysis, *Metallic compounds.

Dobychin, D. P.
REACTION KINETICS ON AGING CATALYSTS. [1963] [8]p. 1 ref.
Order from OTS or SLA $1.10 63-18849

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1957, v. 30 [no. 4] p. 546-552.

DESCRIPTORS: *Catalysts, Aging (Materials), Reaction kinetics.

Particular solutions of kinetic equations are given for 1st order processes on aging catalysts.

Dukelski, M.
EQUILIBRIA IN THE SYSTEM: $(CH_3CO)_2$-O-B_2O_3-H_2O AT 30°. [1963] [6p]
Order from SLA $1.10 63-18173

Trans. of Z[eitschrift für] Anorg[anische und Allgemeine] Chem[ie] (Germany) 1909, v. 62, p. 118-122.

DESCRIPTORS: *Acetic acids, *Boric acid, Water, *Chemical equilibrium, *Phase studies.

Eidus, Ya. T.
STUDY OF CATALYSTS FOR HYDROGENATION OF CARBON MONOXIDE BY COMBINED USE OF DYNAMIC AND STATIC METHODS. COMMUNICATION 4: COMPARATIVE STUDY OF KINETICS OF CARBIDE FORMATION AND HYDROGENATION OF CARBON MONOXIDE OVER Co, Ni AND Fe CATALYSTS. [1963] 12p. (figs. omitted) 8 refs.
Order from OTS or SLA $1.60 63-18254

Trans. of Akademiya Nauk SSSR. O[tdelenie] Kh[imicheskikh] N[auk]. Izvestiya, 1946, no. 4, p. 447-453.
Another trans. is available from OTS or SLA $1.10 as 61-20115 [1961] 7p.

DESCRIPTORS: *Carbides, *Carbon compounds, *Monoxides, Hydrogenation, *Iron catalysts, *Cobalt catalysts, *Nickel catalysts, Reaction kinetics, Catalysts.

Feitknecht, W. and Held, F.
CONCERNING THE HYDROXYCHLORIDES OF MAGNESIUM. Über die Hydroxychloridie des Magnesiums). Rept. no. 25 on Hydroxy-salts of Bivalent Metals. [1963] [37p] (foreign text included) 22refs
Order from SLA $3.60 63-20179

Trans. of Helvetica Chimica Acta (Switzerland) 1944, v. 27, p. 1480-1495.

DESCRIPTORS: *Magnesium compounds, Oxides, *Chlorides, *Hydroxides, Salts, Metals, Molecular structure, Solutions, Chemical reactions.

Freidlin, L. Kh., Balandin, A. A. and others.
CONVERSION OF ARYL HALIDES AND ELIMINATION OF THE AROMATICALLY BOUND HALOGEN WITH STEAM. [1963] 15p. 9 refs.
Order from OTS or SLA $1.60 63-18252

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1946, no. 4, p. 439-446.

DESCRIPTORS: *Benzene derivatives, *Halides, *Chlorides, *Elimination reactions, *Steam, *Catalysis, *Copper catalysts, Chemical reactions.

A new course was found for the catalytic reaction of the interaction of aryl halides with steam, which leads to the elimination of the halogen. A scheme of the process is proposed which allows one to explain and predict a number of its characteristics. The influence of various factors on the reaction was investigated. (Author)

Gastuche, Marie-Claire and Herbillon, Adrien.
STUDY OF ALUMINA GELS: CRYSTALLIZATION IN DEIONIZED MEDIUM. [18 Jan 63] 25p 20refs
Order from SLA $2.60 63-20023

Trans. of Société Chimique [de] France. Bulletin, 1962 [no. 7] p. 1404-[1412].

DESCRIPTORS: *Absorbants, *Aluminum compounds, Oxides, *Gels, *Crystallization, Inhibition, Impurities, Ions, Hydrogen ion concentration.

Two media were chosen for a study of the maturation of the gels: in the mother liquors and a deionized medium. The process of aging which occurred in the mother liquors was, in all respects, similar to that which has been described previously by a number of authors. It was found that the aging process was completely dependent upon pH and theri resulted amorphous stages or at least those which were poorly crystalline. The aging process which occurred in the dialysed medium was, at all times, accompanied by the formation of crystalline trihydrate, the form of which wad dependent on the pH at which the alumina was precipitated. Reasons was found to attribute an inhibitory effect upon the formation of crystalline products according to the nature of the impurity. In the case of gels which were precipitated at low pH, anionic materials produced an inhibitory effect; gels prepared at high pH were interfered with by the cationic impurities. (Author)

Gavoret, G. and Duclaux, J.
MACROMOLECULES AND COACERVATION. III. FRACTIONING. [1963] 4p. (tables figs. omitted).
Order from SLA $1.10 63-18399

Trans. of Journal de Chimie Physique (France) 1945, v. 42, p. 41-44.

DESCRIPTORS: *Polymers, Molecular properties, *Colloids, *Fractionation, Vinyl plastics, *Acetates.

Hansen, M.
K-Na EQUILIBRIUM DIAGRAM. [1963] 2p 11refs
Order from SLA $1.10 63-18227

Trans. from mono. Der Aufbau der Zweistofflegierungen [Berlin, 1936].

DESCRIPTORS: *Potassium, *Sodium, Chemical equilibrium, *Phase studies.

Hantzsch, A. and Berger, Kurt.
THE NITRONIUM OR NITRACIDIUM SALTS AND THE CATIONIC MIGRATION OF NITRIC ACID. 25 Jan 61, 12p. 7 refs.
Order from SLA $1.60 63-10591

Trans. of [Chemische] Berichte (Germany) 1928, v. 61, p. 1328-1334.

DESCRIPTORS: *Electrochemistry, *Nitric acid, Nitrogen compounds, Ions, Salts.

Hayek, E. M., Hohenlohe-Profanter, B. Marcic, and Beetz, E.
GENERAL METHOD OF PREPARING CRYSTALLINE METAL SALTS. [1963] 8p 2refs
Order from SLA $1.10 63-18866

Trans. of Angewandte Chemie (West Germany) 1958, v. 70, p. 307-309.

DESCRIPTORS: *Salts, *Metals, Complex compounds, Acids, Chemical precipitation, Chemical reactions, pH, Crystallization.

Microscopically crystalline homogeneous heavy metal salts are precipitated in a homogeneous system from an alkaline complex salt solution by lowering the pH-value. The method is used primarily for the preparation of neutral and basic difficultly soluble salts, which are otherwise obtained microscopically amorphous and inhomogeneous. (Author)

Heise, M. and Wieland, K.
ABSORPTIONSPECTROGRAPHIC INVESTIGATIONS ON THE OCCURRENCE OF ALUMINUM-MONOHALOGENS, PARTICULARLY OF AlCl, IN THE THERMAL EQUILIBRIUM. [1963] [16p] (figs tables refs omitted)
Order from SLA $1.60 63-18823

Trans. of Helvetica Chimica Acta (Switzerland) 1951, v. 34, p. 2182-2197.

DESCRIPTORS: *Aluminum compounds, Chlorides, *Spectroscopy, *Absorption spectrum, *Thermochemistry, Heat of formation, Chemical equilibrium.

The absorption bands of the AlCl radical appear at $\gtrsim$ 1100°C. owing to the homogeneous equilibrium (I) $(AlCl_3) \rightleftarrows (AlCl) + (Cl_2)$ and at $\gtrsim$ 500°C. because of the heterogeneous equilibrium (II) $(AlCl_3) + 2(Al) \rightleftarrows 3(AlCl)$. The bands were photographed and their increase in intensity with increasing temperature as well as with increasing $AlCl_3$ pressure were measured. From the comparison of the extinctions of the bands in the 2 equilibria the heat of formation of the AlCl gas was found to be $\Delta H_f = -10.5 \pm 2$ kcal/mole, which is in fairly good agreement with the value of Gross and coworkers, -11.6 kcal/mole. The thermodynamic functions of all substances taking part in the two reactions were calculated in the temperature range 298-1500°K. (Author)

Hirooka, M. Yuasa, Yukio, and Fukui, Kenichi.
PROPERTIES AND BEHAVIOR OF ACTIVE BODY IN ETHYLENE-POLYMERIZATION WITH VANADIUM (V) OXYGHLORIDE-ALUMINUM CATALYZER. Pt. 3 of High Polymerization of Olefins with Lewis-Acid-Metal-[lic] Catalyst. [1963] 16p 8refs
Order from SLA $1.60 63-18858

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1962, v. 65, no. 11, p. 1865-1868.

DESCRIPTORS: *Polyethylene plastics, Preparation, *Ethylenes, *Polymerization, *Vanadium catalysts, Vanadium compounds, *Oxychlorides, *Aluminum, Reaction kinetics, Complex compounds.

An ethylene polymerization was conducted at a constant pressure in the presence of vanadium (V)-oxychloride-aluminum as catalyst and the properties of the active center of polymerization were investigated. The velocity of polymerization decreased after reaching its maximum value and reached a constant value. While the molecular weight of the polymer increased markedly until the maximum velocity point, it then became constant. When polymerization was stopped temporarily after reaching the maximum velocity point, the activeness of the polymerization at that time was stopped, which suggested that the decrease of velocity was not due only to deactivation of the catalyst itself. Polymer was introduced into a polymerization system in order to see its effects on the polymerization velocity at temperatures higher than its melting point. It was established that essentially it has no marked effect. It was concluded that the active center of the catalyst was obtained through formation of a complex compound of vanadium (V)-oxychloride and ethylene formed on the surface of aluminum and the decrease of velocity after the maximum velocity point occurs through the mechanism which has something to do with the interaction of the activated complex compound and the monomer. (Author)

Ioffe, I. I. and Lynbarskii, A. G.
KINETICS OF THE CATALYTIC OXIDATION OF BENZENE TO MALEIC ANHYDRIDE. [1963] 14p. 9 refs.
Order from OTS or SLA $1.60 63-18838

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, [no. 2] p. 261-270.

DESCRIPTORS: *Benzenes, *Maleic anhydride, Oxidation, Catalysis, Molybdenum, Vanadium catalysts, Reaction kinetics, Equations, Graphic analysis.

Kinetics of catalytic benzene oxidation to maleic anhydride was investigated on a vanadia-molybdena catalyst in a wide range of concentrations of the initial and final products. Equations, describing the reaction rate, were derived, and an abnormally great reaction order for the oxygen was found under low partial pressures of the latter. Temperature dependence of reaction rate constants was established and the apparent activation energies were determined. It was shown that empirical equations, produced for such processes, can be explained, considering the phase passages in the crystal of catalyst. (Author)

Ishii, Yoshiro, Sekiguchi, Shizen, and Ito, Shiogo.
RATE OF STEP-WISE ADDITION OF PROPYLENE OXIDE TO COMPOUNDS WITH ACTIVE HYDROGEN. [Pt.] 3 of Studies on Non-Ionic Surface Activitating Agents. [1963] [14]p. 5 refs.
Order from SLA $1.60 63-18285

Trans. of Kogyo Kagaku Zasshi (Japan) 1959, v. 62, p. 86-88.

DESCRIPTORS: *Surface-active substances, *Propanols, Ethyl radicals, Synthesis (Chemistry), *Propenes, Oxides, *Epoxides, Addition reactions, Alcohols, Catalysts, Sodium compounds, Alkoxy radicals, Reaction kinetics.

In order to quantitatively measure the rate of step-wise addition of oxylan compounds to compounds with active hydrogen, the reaction velocity for the first and the second stages of the step-wise addition of propylene oxide to 2-ethyl hexanol using sodium isopropoxide catalyst was measured. The reaction velocity of the first stage was measured by maintaining the mole ratio of alcohol to the oxide at 5 : 1 to prevent the intervention of the second stage reaction to a maximum extent, and the following general formula was obtained: $v = k_1$ (alcohol) (oxide) (NaOPr). From measurements at 45°, 60°, and 75°C, $E_a = 14.4$ kcal/mol was obtained. In the second stage of the reaction, although possible subsequent reaction processes may not be neglected, a velocity equation similar to the above one was derived, and from the velocity constants, k_p, at various temperatures, the apparent energy of activation was calculated to be 16.0 kcal/mole. Also, the amounts of polymolar adducts formed as by-products in the first and second stages of the reaction were calculated. (Author)

Izmailov, N. A.
THE THEORY OF ACID DISSOCIATION IN SOLUTION, tr. by Charles T. Ostertag. May 63 [29]p. 44 refs.
ABL Trans. no. 735; AD-407 465.
Order from OTS or SLA $2.60 63-23087

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1954, v. 28, no. 11, p. 2047-2066.

DESCRIPTORS: *Dissociation, *Ionization, *Acid-base equilibrium, *Chemical equilibrium, *Acids, Chemical properties, Physical properties, Solutions, Mathematical analysis, Quantitative analysis, Solvents, Equations.

On the basis of a new theory of acid dissociation, an equation was worked out which characterizes the dependency of acid strength on the physical and chemical properties of the solvents. The derived equation makes it possible, on the basis of independent data, to evaluate quantitatively the influence of solvents on the strength of acids and to estimate the magnitude of the differentiated action of solvents on acid strength. (Author)

Izmailov, N. A., Krasovskii, I. V., Aleksandrov, A. A., and Vail', E. I.
REGULARITIES IN THE DISSOLUTION OF SALTS OF STRONG ELECTROLYTES IN NON-AQUEOUS SOLUTIONS [Zakonomernosti pri Rastvorenii Solei Sil'nykh Elektrolitov v Nevodnykh Rastvorakh]. [1963] 8p 9refs
Order from OTS or SLA $1.10 63-18995

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 74 [no. 1] p. 91-94.
Another trans. is available from SLA as RT-1031, 8p.

DESCRIPTORS: *Electrolytes, *Salts, Solubility, Theory, Solutions, Equations.

Kalafut, St. and Fogltanc, M.
INFLUENCE OF MODIFIERS ON VISCOSE GEL FORMATION. Nov 62 [13]p. 13 refs.
Order from SLA $1.60 62-20422

Trans. of Chemicky Prumysl (Czechoslovakia) 1961, v. 11(36), no. 8, p. 433-438.

DESCRIPTORS: *Cellulose, *Gels, Castor oil, Ethylene oxide, Fatty acids, Alkyl radicals, *Methyl radicals, *Hexyl radicals, *Amines, *Polymers, *Ethylenes, *Glycols, Sodium compounds, Sulfates, Carbon compounds, Sulfides, Zinc compounds, Lattices, Solubility, Chemical precipitation, Neutralization, *Filaments.

The action of Na_2SO_4 on the solubility in alkaline, neutral and acid media of some modifiers of the polyethylene glycol type and N-methylcyclohexyl amine was studied. Their solubility upon reacting with CS_2 was similarly investigated. In the initially alkaline gel, modifiers of the polyethylene glycol type are salted-out by the action of Na_2SO_4 which is partially formed in the gel and partially diffuses into the gel from the bath since it is chemically unreactive. Zinc sulfate in the meantime reacts with by-products in viscose. Amine-type modifiers, by the action of H_2SO_4 in alkaline and neutral medium, produce dithiocarbamate in the form of a fine turbidity. In both cases, the fine precipitate acts as a barrier to the penetration of H_2SO_4, slows down the dexanthation process and facilitates the formation of a uniform lattice of zinc xanthate. This chemical action results in condensing of the lattice from which salt and water are expelled. The more condensed state of the gel is, in itself, a barrier to diffusion of H_2SO_4 and probably prolongs the time of neutralization and thus the D-value.

Karmilova, L. V., Enikolopyan, N. S. and others.
KINETICS AND MECHANISM OF THE OXIDATION OF METHANE. III. THE DETAILED REACTION MECHANISM. [1963] [13]p. 20 refs.
Order from OTS or SLA $1.60 63-18886

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1960, v. 34, no. 6, p. 1176-1185.
Another trans. is available from ATS $13.95 as ATS-10M47R [1961] 10p.

DESCRIPTORS: *Reaction kinetics, *Methanes, Heat of activation, Oxidation, Formaldehyde.

Based on kinetic data and modern energy conceptions of the elementary reactions of radicals with stable molecules, a scheme is proposed of the most probable mechanism for the gaseous phase oxidation of methane, account being made of the branching action in the process on the part of formaldehyde. The validity of the proposed mechanism was confirmed by the quantitative agreement of the theoretical and experimental values for a large number of reaction parameters. (Author)

Karpachev, S. and Pal'guev, S.
DETERMINATION OF THE TRANSFER NUMBERS OF THE CATION AND ANION IN PURE FUSED SALTS. [1963] 25p 2refs
Order from OTS or SLA $2.60 63-18994

Trans. of Zhurnal Fiz[icheskoi] Khimii (USSR) 1949, v. 23, p. 942-952.

DESCRIPTORS: *Fused materials, Mixtures, Lead compounds, Chlorides, Diaphragms (Mechanics), Porosity, Electrolytes, *Electrolysis, Electrolytic cells, Anodes, Cathodes.

The transfer numbers of the cation and anion in fused $PbCl_2$ were measured with and without the use of a porous diaphragm. It was shown that the overflow of liquid through the porous diaphragm under the influence of a difference of potentials plays no essential part in the case investigated. For the transfer numbers of the cation and anion respectively values were obtained within the range 0.1-0.2 and 0.9-0.8, i.e. the mobility of the cation in fused $PbCl_2$ is substantially smaller than that of the anion. (Author)

Karpachev, S., Rempel', S., and Iordan, E.
INVESTIGATION OF ANODE OVERVOLTAGE IN FUSED MIXTURES OF CRYOLITE WITH ALUMINA. [1963] 12p 1ref
Order from OTS or SLA $1.60 63-18997

Trans. of Zhurnal Fiz[icheskoi] Khim[ii] (USSR) 1949, v. 23 [no. 4] p. 422-427.

DESCRIPTORS: *Aluminum compounds, Oxides, *Cryolite, Mixtures, *Fused materials, *Electric potential, Anodes.

The anode overvoltage in fused mixtures of cryolite with alumina on carbon, graphite, and platinum electrodes was investigated. It was shown that the anode potential varies as a function of the current density according to the equation $E = a + b \lg i$. The numerical values of the coefficients b were determined for all of the cases investigated. (Author)

Kel'tsev, V. V. and Vinnikova, N. I.
THE CATALYTIC DEHYDROGENATION OF PROPANE AND ETHANE. [1963] [9]p. 4 refs.
Order from OTS or SLA $1.10 63-18882

Trans. of Vsesoyuzn[yi] Nauch[no]-Issledovatel['skii] Inst[itut] Prirodnykh Gazov. Trudy (USSR) 1961, no. 12(20) p. 187-194.

DESCRIPTORS: *Propanes, *Ethanes, Reaction kinetics, *Dehydrogenation, Propenes, Catalysis.

Formation and depositing of carbon on the catalyst diminish with reduced space velocity of the process of propane dehydrogenation under conditions of introduction of additional hydrogen into the reaction zone, which permits increasing by 8÷10 vol % the average yield in propylene and up to 40-50 hours the catalysts work before regeneration. The method developed for dehydrogenation of propane in a fixed layer of Al-Cr catalyst with introduction of additional hydrogen is recommended for experimental-industrial testing. An increase of the pressure up to 5 atm. during the dehydrogenation of propane increases significantly the carbon depositing on catalyst, diminishes the propylene yield and the working period of catalyst until regeneration. The catalytic dehydrogenation of ethane occurs at temperatures below 750 C, but with a smaller yield in ethylene, than at the thermal pyrolysis at 800-850 C. A significant decomposition of the ethylene formed is observed at ethane pyrolysis above 750 C on non-carbon surfaces until the time, when the whole surface becomes covered by carbon. This phenomenon is not observed on carbon surfaces. (Author)

Kern, J., Dörr, F., and Scheibe, G.
DELAYED FLUORESCENCE IN CYANINE DYES. [1963] 13p. 26 refs.
Order from SLA $1.60 63-18724

Trans. of Zeitschrift für Elektrochemie (West Germany) 1962, v. 66, p. 462-466.

DESCRIPTORS: *Dyes, *Fluorescence, *Luminescence, Atomic Atomic energy levels, Absorption spectrum, Excitation, Electrochemistry.

Polymethinecyanines display a delayed fluorescence at low temperature when dissolved in alcohol-glass. This fluorescence cannot be understood as a high-temperature phosphorescence. It is interpreted as a recombination luminescence caused by retrapping of electrons which have been released from the dye ions by relatively long-wavelength radiant energy and which have been trapped temporarily in electron traps of the solvent. Relations of changes observed in the absorption spectrum depending upon a change from normal to low temperatures are discussed. (Author)

Kernos, Yu. D., Moldavskii, B. L., and Klionskaya, E. A.
OXIDATION OF C_5 HYDROCARBONS TO MALEIC ANHYDRIDE. [1963] [7]p. 6 refs.
Order from OTS or SLA $1.10 63-18837

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3 [no. 2] p. 271-275.

DESCRIPTORS: *Pentenes, *Maleic anhydride, Oxidation, Catalysis, Vanadium catalysts, Phosphates, Ethylenes.

The vapor-phase catalytic oxidations of 2-pentene and of a mixture of isopentenes to maleic anhydride was studied on vanadium phosphate catalyst at the optimal temperatures of 470-500C and a space velocity of about 4,000 hour. Pentene-2 gave higher yields, than isopentenes: with 60 g. pentene-2 per liter of catalyst per hour, the maleic anhydride yield reached 82 wt. %. Acetic and formic aldehydes and acids, and also propionic acids, were the other reaction products from pentene-2. (Author)

Klement'ev, V. A.
HYDRATION OF MAGNESIUM OXIDE. 18 Mar 45, 7p. 5 refs.
Order from OTS or SLA $1.10 63-18137

Trans. of [Gosudarstvennyi Institut Prikladnoi Khimii. Trudy] (USSR) 1934, v. 25, p. 78-81.

DESCRIPTORS: *Magnesium compounds, *Oxides, *Cements, Reaction kinetics.

Larue, G. de.
CHEMICAL AND ELECTROCHEMICAL PROPERTIES IN THE MOLTEN LITHIUM CHLORIDE-POTASSIUM CHLORIDE EUTECTIC [Proprietes Chimiques et Electrochimiques dans l'Eutectique de Lithium Chlorure et Potassium Fonde] tr. by Liz Appleby. Thesis, Paris U. (France). 8 June 62 [92]p. 144 refs.
Order from OTS or SLA $8.60 HW-TR-40

Trans. of Commissariat à l'Energie Atomique, Paris (France) no. 1847, 1961.

DESCRIPTORS: *Eutectics, *Chlorides, *Potassium compounds, *Lithium compounds, *Fused materials, Electrodes, Electric potential, Electrochemistry, Chemical reactions, Oxides, Sulfides, Solubility, Particles, Solutions.

Use of intensity-potential curves for the determination of species in solution in the eutectic, and the prediction of chemical reactions
Behavior of metallic halides in the molten bath
Behavior of metallic oxides in the molten eutectic (109)
Behavior of sulfides in the fused eutectic (110)
Oxidation of a solution containing O^{2-} and S^{2-} particles
Behavior of sulphur and its oxidized compounds in the molten bath
Potential - pO^{2-} diagram of the oxidation-reduction systems of sulphur
Potential - pO^{2-} diagrams of the oxidation-reduction systems of chromium

Lee, P. J. v. d.
VAPOR PRESSURE OF HEXACHLOROETHANES (Über den Dampfdruck des Hexachloräthans). [1963] [5]p. (foreign text included).
Order from SLA $1.10 63-18132

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1935, v. 223, p. 213-216.

DESCRIPTORS: *Chlorocarbons, *Ethanes, *Vapor pressure, Measurement.

Margolis, L. Ya., Enikeev, E. Kh. and others.
THE MODIFICATION OF HYDROCARBON OXIDATION CATALYSTS. [1963] [11]p. 41 refs.
Order from OTS or SLA $1.60 63-18840

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, [no. 2] p. 181-188.

DESCRIPTORS: *Catalysts, *Oxidation, *Oxides, *Silver catalysts, *Copper catalysts, *Ethylenes, *Propenes, Hydrocarbons, Reaction kinetics, Molybdenum compounds, Bismuth compounds, Tungsten compounds.

The effects of a wide circle of additives on the work function and catalytic activity of metallic and semiconductive catalysts (silver and copper oxide) were investigated. Additives with electronegativity, greater than that of the catalyst diminished the activity, increased the work function of catalysts electrons and the selectivity of ethylene and propylene oxidations. A direct composition dependence of the variation in selectivity and in work function was observed with the mixed catalysts (MoO_3-Bi_2O_3 and WO_3-Bi_2O_3). (Author)

Mashovetz, V. P. and Lundina, Z. F.
DENSITY OF MIXTURES OF SOME MOLTEN ELECTROLYTES. [1963] [27]p.
Order from OTS or SLA $2.60 63-18141

Trans. of mono. Sbornik Trudov Pervoi Vsesoyuznoi Konferentsii Nevodnuim Rastvoram (All-Union Conference on Nonaqueous Solutions (no. 1) [Kiev] 1935, p. 191-212.

DESCRIPTORS: *Electrolytes, Density, Chlorides, *Fused materials, Mixtures, Electrochemistry, Statistical data, Graphic analysis.

Matveev, K. I., Osipov, A. M. and others.
THE CATALYTIC OXIDATION OF ETHYLENE IN THE PRESENCE OF AQUEOUS PALLADIUM SALTS SOLUTIONS. [1963] [18]p. 23 refs.
Order from OTS or SLA $1.60 63-18408

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 5, p. 661-673.
Another trans. is available from ATS $18.50 as ATS-13Q67R [1963] 15p.

DESCRIPTORS: *Ethylenes, Oxidation, *Acetaldehydes, Synthesis (Chemistry), *Catalysis, *Palladium catalysis, *Copper catalysts, *Complex compounds, Reaction kinetics.

Ethylene is oxidized to acetaldehyde in the presence of bivalent palladium and copper salts in aqueous solution by means of an intermediate ethylene-palladium complex, regenerated through the action of copper salt. The different stages of the process are discussed and a reaction mechanism is proposed. A series of optimal parameters and also the type of complexing linkages, which accelerate the catalysis, are recommended on the basis of theoretical and experimental data. Conclusions are drawn on the limiting stages of the process. (Author)

Maun, K.
PROCESS Fn THE EMULSIFICATION OF ASPHALT AND SIMILAR WATER-IMMISCIBLE SUBSTANCES. [1963] [4p]
Order from OTS or SLA $1.10 63-20231

Trans. in manuscript of German patent 170,133 [1906]

DESCRIPTORS: *Asphalt, *Colloids, Solvents, Solutions, Mixtures, Soaps, Starches, Water.

Prettre, M.
OXIDATION AND IGNITION REACTIONS IN CONTACT WITH HOT SURFACES. PT. II. HETEROGENEOUS COMBUSTION PROCESS AND ADSORPTION OF DETONATING GAS ON VITREOUS SURFACES, CLEAN OR COATED WITH POTASSIUM CHLORIDE: INFLUENCE OF THE ADSORPTIONS ON THE CHAIN REACTION OF OXYHYDROGEN MIXTURES. [1963] 20p 12refs
Order from SLA $1.60 63-18562

Trans. of [Memorial des Poudres (France) 1937, v. 27, p. 253-273].

DESCRIPTORS: *Adsorption, Coatings, *Potassium compounds, *Chlorides, *Combustion, *Explosive gases, Mixtures, *Oxidation, *Ignition, Surfaces, *Reaction kinetics, Detonations.

Riccoboni, Luigi.
ABSORPTION SPECTRA OF SOME ORGANOMETALLIC COMPOUNDS OF TIN AND LEAD. [1963] 33p (figs omitted) 58refs
Order from SLA $3.60 63-18971

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1941, v. 71, p. 696-713.

DESCRIPTORS: *Metalorganic compounds, *Tin compounds, *Lead compounds, Ethyl radicals, *Ultraviolet spectroscopy, *Absorption spectrum, Molecular structure, Dissociation, Photochemistry.

Rysavy, D.
A CONTRIBUTION TO THE PROBLEM OF CONCENTRATED SUSPENSIONS. [1963] 16p (figs. omitted) 20refs
Order from SLA $1.60 63-18651

Trans. of Z[eitschrift für] Physik[alische] Chem[ie] Leipzig (East Germany) 1958, v. 208, p. 293-308.

DESCRIPTORS: *Colloids, *Plasticizers, *Polyvinyl chloride, Viscosity, Elasticity, Plasticity, Surface properties.

In mixtures of PVC particles with plasticizers, the importance of the surface characteristics of the particles for the flow behavior of the prepared suspensions was proved. The results of these experiments are in agreement with the results of the studies of Pryce-Jones on other types of suspensions. In a series of publications, which deal with the rheology of PVC pastes, reports were published on the viscosity changes which have been produced by the mixing of PVC particles of various sizes. These particles were always prepared by the drying of PVC latex in spray-drying plants, in which the small particles were exposed to the high temperature of dry air for lengths of time different from those to which the large particles were exposed, and therefore have different surface characteristics. The opinion is expressed that viscosity changes in pastes, which have been obtained by mixing various PVC fractions, were the result mainly of a combination of various surface types, and not only the result of a combination of various particle sizes. (Author)

Saito, Hisahiko; Sugihara, Makoto, and Saito, Minoru.
FORMATION OF FERRITE MICROPOWDERS OF SPINEL TYPE. Studies on the Formation of Ferrites from Solutions, 1. [1963] 16p. 14 refs.
Order from SLA $1.60 63-14499

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1962, v. 65, p. 1748-1753.

DESCRIPTORS: *Ferrites, Powders, Solutions, Reaction kinetics, Synthesis (Chemistry), Physical chemistry, Hydrogen ion concentration.

A method is given for forming numerous ferrite micropowders of spinel type that were formerly difficult to obtain in the temperature range of 50 ~ 60°C to approximately 100°C. It was found that the concentration of excess alkali plays an important role in the formation of ferrites. Additionally, formation conditions (i.e. kind of alkali, reaction temperature, reaction time, kind of metallic ion, and solution concentration, etc.) are found to be closely related to the formation also, as evidenced by x-ray analysis and the study of magnetic properties. Thus, when sodium hydroxide was used as an alkali, it was found that various simple and complex ferrites such as $MnFe_2O_4$, $CoFe_2O_4$, $CuFe_2O_4$, $ZnFe_2O_4$, $MnO\text{-}ZnO\text{-}Fe_2O_3$, $NiO\text{-}ZnO\text{-}Fe_2O_3$, and $CoO\text{-}FeO\text{-}Fe_2O_3$, etc., can be obtained in a varied time span (of minutes) at 100°C with pH over 11.0. (Author)

Sakurada, I. and Sakaguchi, Y.
POTENTIOMETRIC INVESTIGATIONS OF POLYELECTROLYTES [Potentiometrische Untersuchungen von Polyelektrolyten]. [1963] [10]p. 15 refs.
Order from SLA $1.10 63-18699

Trans. of Makromolekulare Chemie (Switzerland) 1963, v. 61, p. 1-13.

DESCRIPTORS: *Electrolytes, Polymers, Copolymers, *Stereochemistry, *Styrene plastics, *Polyvinyl alcohol, *Acrylic resins, *Carboxylic acids, Maleic anhydride, Solvents, Acrylic acids, *Electrochemistry, Polymerization, Saponification, Potentiometers.

In order to get a better understanding of the effects of the near neighbor interaction on the behavior of aqueous solutions of polyelectrolytes, potentiometric titrations of polyelectrolytes with various stereostructures and distributions of ionised groups in the polymer chain were carried out; copolymeric electrolytes with unionisable comonomer were also measured. In connection with these experiments, it was tried to prepare polyelectrolytes of various tacticity with the use of radical polymerisations at higher temperature. The effect of a small amount of branching in polyelectrolyte molecules on the solution properties, and the swelling behaviors of slightly crosslinked polyelectrolytes were also investigated. The results show that the solution properties of polyelectrolytes can be affected appreciably by the near neighbor interaction and hypercoiling; furthermore it was concluded that the stereoregularity could be controlled fairly well by the condition of radical polymerisation. (Author)

Schmidt, H. J.
CALCULATIONS FOR THE HETEROGENEOUS FIRST ORDER WALL REACTION IN CYLINDRICAL TUBES. [1963] 5p 7refs
Order from SLA $1.10 63-18948

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1962, v. 34, p. 841-842.

DESCRIPTORS: Chemical reactions, *Reaction kinetics, Diffusion, *Fluid flow, Pipes, Laminar flow, Special functions, Mathematical analysis.

The theoretical precalculation of the influence of flow and diffusion on the conversion in chemical reactions up to the present has been successful in few cases. The special cases solved so far for the case of the heterogeneous wall reaction of the first order in cylindrical flow reactors are briefly compiled. The detailed calculations of the function for the dimensionless contact time carried out by Damköhler under certain simplifying assumptions are supplemented and the previously published values of this function are corrected. (Author)

Sergeev, G. B., Sharaev, O. K., Topchieva, K. A., Perel'man, A. I., and Topchiev, A. V.
INVESTIGATION OF ETHYLENE POLYMERIZING CHROMIA CATALYSTS BY THE ESR METHOD. [1963] [4p] 8refs
Order from OTS or SLA $1.10 63-18847

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 1] p. 18-20.

DESCRIPTORS: *Ethylenes, *Chromium catalysts, *Electron spin resonance, Oxides, Aluminum compounds, Line spectrum, Ions, Polymerization, Polyethylene plastics.

In the study of ethylene polymerization, carried out on chromia catalysts with simultaneous studying of ESR

spectra at various stages of the process, an attempt was made for connection of the catalytic activity of chromium with its valency state, responsible for the reaction of polymerization. (Author)

Shcherbakov, I. G., Karpachev, S. V. and others.
THE ELECTROLYTIC EXTRACTION OF MAGNESIUM FROM NATURAL CARNALLITE (RESULT OF RESEARCHES 1930-31. Paper presented at Mendeleev Convention (no. 6). [1963] 30p.
Order from OTS or SLA $2.60 63-18303

Trans. of Kalii (USSR) 1963, v. 5, no. 10, p. 19-36.

DESCRIPTORS: *Material separation, *Electrolysis, *Magnesium, Electrolytes, Additives, Feasibility studies, *Carnallite.

Shcherbakov, I. G., Markov, B. F., and Azer'er, K. Ya.
THE ELECTROMOTIVE FORCE OF POLARIZATION IN THE ELECTROLYSIS OF FUSED CARNALLITE. II. INFLUENCE OF CERTAIN TECHNICAL ADMIXTURES IN CARNALLITE ON POLARIZATION. [1963] [10]p. 19 refs.
Order from OTS or SLA $1.10 63-18301

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1939, v. 12 [no. 7] p. 976-980.

DESCRIPTORS: *Polarization, *Electric potential, Electrolysis, Electrolytes, Potassium compounds, Sulfates, Calcium compounds, Fluorides, Barium compounds, Chlorides, Tests, Measurement, *Carnallite

The objective was to follow the action of sulfur, $BaCl_2$ and CaF_2 admixtures, possessing significance under technical conditions, in the electrolyte on the cathode process. (Author)

Shneider, P. and Rozovskii, A. Ya.
USE OF THE EQUATION OF FROST IN CALCULATION OF THE REACTION KINETICS OF HETEROGENEOUS CATALYTIC PROCESSES. [1963 [5]p. 6 refs.
Order from OTS or SLA $1.10 63-18841

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 3, p. 427-430.

DESCRIPTORS: *Reaction kinetics, *Catalysis, *Heat of activation, Equations, Errors.

The effect of constant and absolute error in determination of the degree of conversion of the reaction kinetics treatment by the Frost equation was examined. Such errors give curves, instead of straight lines, in determination of the degree of conversion. These curves can be approximated by straight lines, whose slope can be greater, than one, with medium-sized conversions and errors, that are not too large. Temperature dependence of erroneous α Δ values, found in this way, gives accurate values of apparent activation energies. The errors can explain some experimental data, considered earlier as contrary to the physical sense of constants. (Author)

Sippel, A. and Heim, E.
CALCULATION OF DISTRIBUTION OF THE DEGREES OF PARTIAL SUBSTITUTION OF MACROMOLECULES (Substitutionsgradverteilung für die Partielle Substitution an Makromolekülen). [10 Apr 63] [14]p. 6 refs.
Order from SLA $1.60 63-18367

Trans. of Kolloid-Zeitschrift und Zeitschrift für Polymere (West Germany) 1962, v. 185, no. 2, p. 97-102.

DESCRIPTORS: *Polymers, *Cellulose acetates, Polymerization, *Substitution reactions, Statistical distributions, Cellulose, *Acetylation, Reaction kinetics.

Subbotin, A. I., Kogan, P. S., and Kazarnovskii, S. N.
PYROLYSIS OF THE BUTYLENE FRACTION IN THE PRESENCE OF OXYGEN. [1963] [8]p. 13 refs.
Order from OTS or SLA $1.10 63-18887

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 8, p. 1-6.

DESCRIPTORS: *Butenes, *Acetylenes, *Ethylenes, Pyrolysis, Oxygen, Reaction kinetics.

Commercial butylene fraction was pyrolyzed in the presence of oxygen at 1200 C under 60-120 mm Hg and at a gas residence time of 0.001 sec. in mixture with hydrogen. The process was investigated by the dynamic method, varying the oxygen content up to 38 vol.%. It was found that 8 to 10 vol. % oxygen sharply reduces the coke and resin yields in comparison to the thermal pyrolysis and that smaller (5 to 7 vol. %) and greater oxygen contents of the initial mixture lead to increased formation of acetylene and ethylene. Yields of the latter compounds reach a maximum with a ratio oxygen/hydrocarbons of 0.06 to 0.10. Further increase of oxygen concentration lowered the yield in desired products, because of the oxygen-containing products. (Author)

Temkin, M. I.
GRADIENTLESS METHODS FOR DETERMINATION OF THE REACTION RATE. [1963] [11]p. 30 refs.
Order from OTS or SLA $1.60 63-18839

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 4, p. 509-517.

DESCRIPTORS: *Reaction kinetics, *Activity coefficient, Catalysis, Towers (Chemistry).

Use of the statistical and flow methods for measurement of the reaction rate is connected with simplifying assumptions, not always accurate, and the mathematical analysis of the results is often difficult. Study of reaction rate under gradientless, stationary conditions assures direct production of data, comparable with the kinetic equation in the differential form, and a series of other advantages. Different forms of gradientless reactors were examined, in particular different modifications of the flow-circulating method, which is a general method of gradientless reactor realization for heterogeneous catalytic processes. (Author)

Teuber, P. B.
TALL OIL (V). 8 Nov 62, 15p. (figs. formulae omitted). 4 refs.
Order from SLA $1.60 63-10008

Trans. of Seifen-Öle-Fette-Wachse (West Germany) 1962, v. 88, no. 4, p. 93-97.

DESCRIPTORS: *Oils, Cellulose, Processing, Tables, Wood pulp, *Sulfate pulp, Resins, Black liquor.

Trubnikov, V. F. and Chenikov, V. V.
KINETICS OF THE VAPOUR SORPTION BY TOBACCO LEAVES. [1963] 8p (2 figs. omitted) 4refs
Order from OTS or SLA $1.10 63-18932

Trans. of Izv[estiya] Vys[shikh] Ucheb[nykh] Zav[edenii]. Pishch[evaya] Tekh[nologiya] (USSR) 1962, no. 4, p. 150-153.

DESCRIPTORS: *Tobacco, *Absorption, *Moisture, Sorption, Temperature, Humidity, Fermentation, Cigarettes, Smokes, Processing.

The authors quote experimental data on the absorption of moisture by tobacco leaves in the current of air, and show the relation between the rate of absorption of moisture and temperature and humidity. It is shown that the process of sorption of water by non-fermented tobacco consists of two periods, having different vapour sorption coefficients. A formula for the determination of the time of vapour sorption by tobacco Ostrolist 2747 grade III is given. (Author)

Wittig, Franz Eberhardt.
ON THE SYSTEMATOLOGY OF THE HEATS OF MIXING OF THE B-METALS. [Rept]. no. 9 [on] Contributions to the Energetics of Metallic Systems. [1963] [34]p. 44 refs.
Order from SLA $3.60 63-18067

Trans. of Zeitschrift für Elektrochemie (West Germany) 1959, v. 63, no. 2, p. 327-341.
Another trans. is available from FRI as FRI Trans-181 [1963].

DESCRIPTORS: Metals, *Zinc, *Cadmium, *Indium, *Thallium, *Tin, *Lead, *Bismuth, *Thermochemistry, Calorimetry, *Heat of solution, Chemical bonds, Models (Simulations), Thermal conductivity, Specific heat, Graphic analysis.

Heats of mixing in binary systems of the B-metals zinc, cadmium, indium, thallium, tin, lead and bismuth were measured using a new high-temperature calorimeter. They were correlated with the number of statistically-distributed A-B bonds and brought together, in the form of the so-called ξ-curves, in homologous series containing all the binary systems of one B-metal with all the others. These homologous series show certain systematic effects. As regards the shape of the ξ-curves, there are various types depending on the position of the two components in the periodic system. Qualitative relationships are found for deviations from the distribution function of the sphere model, the conductivity mechanism, the specific heat above the melting point and the temperature dependence of the heats of mixing.

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 294 (EARTH SCIENCES SERIES). 12 Sep 63, 12p. JPRS: 21047.
Order from OTS $0.50 63-31745

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, *Geophysics, Computers, *Geodesics, Archaeology, Electronic accounting machines, Earth augers, Mapping, Numerical methods and procedures, Micrometers, Gravity, Maps, Terrestrial magnetism, Electromagnetic pulses, Electron density, Explosion effects, Astronomical geodesics, Earthquakes, Ionospheric disturbances, Meteorological parameters, Weather forecasting, *Czechoslovakia.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 289 (EARTH SCIENCES SERIES). 9 Sep 63, 11p. JPRS: 20973.
Order from OTS $0.50 63-31704

Consists of abstracts of articles from the scientific and technical journals of Hungary and Rumania.

DESCRIPTORS: *Abstracts, *Geophysics, *Hungary, *Rumania, *Geodesics, Maps, Terrestrial magnetism, Atmospheric electricity, Aerial photography, Electromagnetic properties, Human engineering, Gravity, Agriculture, Erosion.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 316 (EARTH SERIES). 10 Oct 63, 8p JPRS: 21402.
Order from OTS $0.50 63-31911

Consists of abstracts of articles from selected scientific and technical journals of Hungary and Yugoslavia.

DESCRIPTORS: *Abstracts, *Geophysics, Meteorology, Climatology, Weather forecasting, Ecology, Geodesics, *Hungary, *Yugoslavia.

SOVIET ATMOSPHERIC AND MARINE RESEARCH. 11 Oct 63, 20p (figs omitted) JPRS: 21412.
Order from OTS $0.75 63-31919

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 8, p. 76-77, 112-115.

DESCRIPTORS: *Atmospheric sounding, *Oceanology, Indian Ocean, Physics, Weather forecasting, Scientific organizations, Conferences, Comets, Meteors, Upper atmosphere, *Meteorology.

Contents:
Weather forecasting and problems of atmospheric physics
Studies conducted by the Vityaz' under the International

Indian Ocean Expedition Program, by P. L. Bezrukov
Plenary session of the Commission for Comets and Meteors, by I. T. Zotkin
Studies in the physics of the upper atmosphere, by N. I. Fedorova.

SOVIET HYDROLOGY: SELECTED PAPERS, 1962, NO. 4, P. 345-467, tr. by Lloyd G. Robbins and others. Jun 63, 1v 109refs
Order from AGU $7.50, $20.00/year

Trans. of G[osudarstvennyi] G[idrologicheskii] I[nstitut]. Trudy (USSR) 1962, v. 85, p. 87-108; v. 95, p. 101-172; [Glavnaya Geofizicheskaya Observatoriya]. Trudy (USSR) 1962, no. 131[193] p. 29-44; [Akademiya Nauk SSSR]. Izvestiya. Geogr[aficheskaya] Ser[iya] 1962, no. 3, p. 82-89; [Meteorologiya i Gidrologiya] (USSR) 1962, no. 9, p. 19-27, 40-45, 49-51.

DESCRIPTORS: *Hydrology, Lakes, Thermodynamics, Drainage, Rivers, Atmospheric precipitation, Terrain, Hydraulic research, Permafrost, Floods, Avalanches, Abstracts.

Contents:
Certain features of the thermal regime of small lakes during the ice free period, by T. N. Filatova
The water balance of small drainage basins during the period of spring high water, by O. I. Krestovskii
Some laws of formation of the channel and of the flood-plain of the Polomet' River, by V. A. Vinogradov
Comparison of amount of winter precipitation, as determined by precipitation (and rain) gages, with the maximum water equivalent of the snow, as determined by snow surveys, by Ts. A. Shver
On the problem of the origin of shapes of river valleys (by example of the river valleys of Southern Yakutiya) by D. A. Timofeev
Concerning the turning of a river flow, with the current breaking away from a convex shore, by A. N. Lyapin
Permeability of frozen soils as a function of their moisture content and fall tillage, by P. A. Larin
Investigation of the form of flood waves of rain-caused floods in the Prut and Stryi Rivers, by V. G. Rybka
Avalanche studies in Central Tien Shan, by E. B. Krasnosel'skii
Abstracts

SOVIET HYDROLOGY: SELECTED PAPERS, 1962, NO. 5, P. 469-479, tr. by Lloyd G. Robbins and others. Order from AGU $7.50, $20.00/year

Trans. of G[osudarstvennyi] G[idrologicheskii] I[nstitut]. Trudy (USSR) 1962, v. 87, p. 3-45; v. 96, p. 99-112, 123-130; v. 97, p. 204-242; [Uzbekskii Geologicheskii Zhurnal] (USSR) 1962 [v. 6] no. 4, p. 83-87; [Sovetskaya Geologiya] (USSR) 1962, no. 8, p. 79-91; [Meteorologiya i Gidrologiya] (USSR) 1962, no. 11, p. 45-50.

DESCRIPTORS: *Hydrology, Meteorological radar, Radiation measurement systems, Hydroelectric power systems, Electric bridges, Thermometers, Drainage, Computers, Permafrost, Hydraulic research, Rivers, Lakes, Tides, Abstracts

Contents:
Measurement of the intensity of rain by the radar method, by A. M. Dimaksyan and others
Remote measurement of water equivalent of snow by means of nuclear radiation, by A. M. Dimaksyan
From experience in estimating the flow at large hydroelectric stations, by A. M. Gavrilov
GR-51 microelectrothermometer, by G. M. Rimmar
Absolute compensation pyrgeometer, by A. P. Braslavskii and V. A. Rymsha
Conditions of formation of summer low-water flow of the Baltic area rivers and long-range forecasts of their streamflow, by A. M. Norvatov
Calculating the prognosis of the level changes of ground water using electric computers, by F. B. Abutaliev and others
Principal features of ground water in the area of development of permafrost formations, by V. M. Ponomarev
Application of the hydraulic index of a river channel to the extrapolation of discharge curves, by V. N. Pavlov
Certain data on currents in the southern part of Lake Baikal, by B. A. Pomytkin
Abstracts

SOVIET HYDROLOGY: SELECTED PAPERS, 1962, NO. 6, P. 581-694. 1963, 1v. 120 refs.
Order from AGU $7.50, $20.00/year

Trans. of G[osudarstvennyi] G[idrologicheskii] I[nstitut]. Trudy (USSR) 1962, v. 87, p. 46-54; v. 98, p. 56-98, 247-262; v. 99, p. 261-273; [Akademiya Nauk SSSR. Laboratoriya Gidrogeologicheskikh Problem. Trudy] 1962, v. 45, p. 27-43, 49-66; [Meteorologiya i Gidrologiya] (USSR) 1962, no. 12, p. 30-32.

DESCRIPTORS: *Hydrology, Liquid-level gages, River currents, Velocity, Dams, Drainage, Statistical analysis, Maps, Potassium, Geochemistry, Snow, Drift, Abstracts, Atmospheric precipitation

Contents:
Experiment in operation of water-stage recorders UDV-1, by N. V. Zotimov
Investigations of pulsation of velocities of flow of mountain streams and of its effect on the accuracy of discharge measurements, by V. V. Dement'ev
Field investigation of wind-driven currents along steep shores of Kairak-Kumskii reservoir, by I. S. Boiko
Determination of standard parameters of a logarithmically normal distribution curve by three reference ordinates, by G. A. Alekseev
Hydrogeochemical charts, principles and methods of their compilation, by A. V. Shcherbakov
Potassium in mineral waters, by V. V. Krasintseva and A. K. Aleshina
On the question of the part played by the chemical composition of atmospheric precipitation in the formation of ground water in the Medvenka River basin, by V. P. Zverev
Peculiarities of the drifting and accumulation of snow in conditions of Western Kazakhstan, by I. S. Grishin
Abstracts
Subject and author indexes-1962

TRANSACTIONS OF THE CENTRAL SCIENTIFIC-RESEARCH INSTITUTE OF GEODESY. AEROSURVEY. AND CARTOGRAPHY, 1962, VOL. 145, tr. by W. Burton and others. Jan 63 [134]p. 53 refs. ACIC TC-561.
Order from OTS or SLA $10.50 63-19244

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1962, v. 145, p. 3-82.

DESCRIPTORS: *Scientific research, *Geodesics, Airborne, *Surveying, *Mapping, Series, *Gravity anomalies, Terrain, Astronomical geodesics, Functions, Mathematical analysis, Digital computers.

Contents:
An evaluation of the Stokes' series and some attempts to make his theory more accurate, by M. S. Molodenskii and others
Effect of topographic masses on deduction of characteristics of earth's gravitational field, by L. P. Pellinen
Evaluation of accuracy of astronomical-gravimetric leveling in the USSR, by L. P. Pellinen and L. A. Govorova
Concerning computing accuracy of the effect of distant zones on the quasigeoidal height by means of disintegration of the Stokes' function according to the K and Q coefficients, by E. M. Orlova
Deducing relation between gravity anomaly and elevation to obtain mean gravimetric data for large areas, by V. A. Taranov
Calculation of the earth's gravitational field characteristics with the aid of the electronic digital computer "Ural-1" utilizing the gravity anomaly expansion in terms of spherical functions, by A. I. Shabanova.

Climatology and Meteorology

Futo, Jozsef.
MICROCLIMATIC MEASUREMENTS ON THE GREAT MEADOW (NAGYMEZO) OF THE BUKK PLATEAU. 26 Aug 63, 16p. 9 refs. JPRS: 20806.
Order from OTS $0.50 63-31623

Trans. of Foldrajzi Ertesito (Hungary) 1962, v. 11, no. 4, p. 487-497.

DESCRIPTORS: *Climatology, *Terrain, *Hungary, Geography, *Atmospheric temperature, Micrometeorology, Measurement.

The results of temperature measurements indicate that the dolinas of the Great Meadow are the coolest frost hollows of the surrounding environment in which temperatures below zero Centigrade may develop at dawn of any day of the year, and under given climatic conditions the temperature may drop far below zero Centigrade. Exceptionally large temperature differences occur between the dolina bottom and the forest at the edge of the dolina. This temperature difference is greatest at dawn, when it may exceed 10 degrees Centigrade. Advection accompanied by strong winds may almost completely eliminate the microclimate. The microclimate of the dolinas also is characterized by great warming during the day. During the period of measurements the wind velocity always was higher in the forest that at the dolina bottom. (Author)

Gubanova, S. I., Khalikova, G. M., and Turyansksys, N. G.
ON FORECASTING THE GEOPOTENTIAL IN A POLYTROPIC ATMOSPHERE (K Prognozu Geopotentsiya v Politropnoi Atmosfere) tr. by Irene A. Donehoo. Jun 63, 13p 4refs WB/T-97.
Order from OTS $0.50 63-11701

Trans. of Tsentral'nyi Institut Prognozov. Trudy (USSR) 1962, v. 102, p. 53-59.

DESCRIPTORS: *Weather forecasting, *Meteorology, Climatology, *Barometric pressure, Atmosphere, Northern Hemisphere, Differential equations, Numerical analysis

A nonlinear spatial problem on forecasting the geopotential over the Northern Hemisphere is solved. It is assumed that the temperature varies linearly with height in the troposphere and does not depend on the vertical coordinates in the stratosphere. The effect of ground friction is studied by determining the vertical components of speed at the limit of the boundary layer. The problem is reduced to a system of two differential equations, which are solved by successive approximations. The solution is derived for an orthogonal rectilinear network, located on the Northern Hemisphere map in a stereographic projection. (Author)

Geography

SAND CONTROL RESEARCH IN COMMUNIST CHINA, NO. 4. 6 Sep 63, 751p JPRS: 20938.
Order from OTS $8.50 63-31681

Trans. of Chih Sha Yen Chiu (Chinese People's Republic) 1962, no. 4, 278p.

DESCRIPTORS: *Sand, *Deserts, *Scientific research, *China, Crystal structure, Petrology, *Geography, Terrain, Plants (Botany), Distribution, Soils, Classification, Wind, Hydrology, Control, Climatology.

Contents:
Editor's note
The grain composition and mineral composition of sands at the eastern part of the Central Asia Desert, by M. P. Pi-te-lo-fu
The causes of formation of desert, types of desert and characteristics of desert movement, by Lou T'ung-mao
The classification of land types and its application in the preparation of sand control program, by Lou T'ung-mao
The classification of sand dune landscape in the arid and semi-arid regions of China's Northwest, by Chu Chen-ta
The application of experimental method to study certain features of the formation of Aeolian sand landscape, by Chu Chen-ta
Large scale geomorphological survey of sand region and the preparation of geomorphological map, by T'an Chien-an
Geomorphological features of lake basins and sands in the eastern part of Teng K'o Li Desert, by Kuo'Shao-li
The geomorphology of the K'u Pu Ch'i Desert, by Chou Wan-fu

Geomorphological features of the Chung Hou Lien Ho Ch'i region of Inner Mongolia and the question of the formation of sands, by Ma Tsai-t'ao
Ground water of the Dzhungaria Basin and its significance on sand control, by Chao Yun-ch'ang
The distribution of vegetation in the desert region of Central Asia, by M. P. Pe-te-lo-fu
The vegetation in China's Northwest and Inner Mongolia desert region and preliminary views on its rehabilitation and utilization, by Li Po
Vegetation in the southwestern section of Tarim Basin, by Liu Hua-hsun
Vegetation in Inner Mongolia's Teng Ko Li Desert and its rehabilitation and utilization, by Huang yin-hsiao and Wang Chien-chu
Summarization of a sand area soil survey conducted in 1959, by Li Hsiao-fang
Types of soil in the sands of the six provinces (region) of the Northwest and Inner Mongolia and its improvement and utilization, by Ts'ai Wei-ch'i
Preliminary observation of the course of formation of soil in the sands at the Lin Wu area, by Li Hsiao-fang
The formation of saline soil in the T'ou Tao Hu area and preliminary experiment on its improvement and utilization, by Ti Hsing-min
Preliminary views regarding the improvement of saline soil in the southwestern sand area of Ordos Plateau, by Li Hsiao-fang
Moisture condition of drifting sand dune and sand-settling afforestation, by Ch'en Wen-jui and Chang Chi-hsien
Preliminary observation of the effect of precipitation on the moisture content in the sands, by Chiang Ai-liang and Ch'en Chien-sui
The change of climate in Tsaidam basin during the quaternary period, by Hsu T'ing-kuan
Utilizing wind power in China's desert region, by Chao Hsueh-hua.

SOVIET GEOGRAPHY: REVIEW AND TRANSLATION, VOL. 4, NO. 7. Sep 63, 64p.
Order from AGS $1.00, $6.00/year

Trans. of Voprosy Geografii (USSR) 1963, no. 61, p. 5-45, 153-176.

DESCRIPTORS: *Geography, *Transportation, Cargo, Railroads, Traffic, Population, Distribution, Commerce

Contents:
Methods of forecasting freight flows in planning a transport net, by N. N. Kazanskii and Yu. V. Lasis
Forecast of average length of haul on Soviet railroads, by V. S. Varlamov and N. N. Kazanskii
The distribution of population and related indicators in long-term planning of passenger traffic, by O. A. Kibal'chich

Jakucs, Pal.
RELATIONSHIP BETWEEN VEGETATION AND RELIEF. 30 Aug 63, 18p. 9 refs. JPRS: 20888.
Order from OTS $0.50 63-31664

Trans. of Foldrajzi Ertesito (Hungary) 1962, v. 11, no. 2, p. 203-215.

DESCRIPTORS: *Ecology, *Plants (Botany), *Terrain, Geography.

Basic research problems in the geography of transportation of capitalist and underdeveloped countries, by L. I. Vasilevskii
News notes
Current literature subject listing

Geology

INTERNATIONAL GEOLOGY REVIEW, VOL. 5, NO. 8, P. 915-1070. Aug 63, 1v. 111refs
Order from AGI $5.00, $55.00/year

Trans. of Akademiya Nauk SSSR. Paleontologicheskii Institut. Trudy, 1960, v. 83, p. 26-63; Geologische Rundschau (West Germany) 1961, v. 51, no. 2, p. 315-330; Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Geologicheskii (USSR) 1962, v. 37(67) no. 1, p. 25-42; Izvestiya Vysshikh Uchebnykh Zavedenii. Geologiya i Razvedka (USSR) 1961 [v. 4] no. 7, p. 3-21; no. 9, p. 25-41; Chishitsu Chosajo Geppo (Japan) 1960, v. 11, no. 6, p. 1-20.

DESCRIPTORS: *Geology, Periodicals, Paleontology, Geophysics, Seismographs, Structural geology, Economic geology, Granite, Natural gas, Oils, Well logging, Gamma counters, Geophysical prospecting, Reviews

Contents:
Theory of phylogenetic systematics, pt. 2, by V. E. Ruzhentsev
Progress in the use of seismic methods in the exploration of the earth's crust, by H. Closs and Cl. Behnke
On the structure of the earth's crust in platformal regions, by I. A. Rezanov
Structure and conditions of the formation of ore-bearing muscovite granites, by V. V. Aristov and I. Ya. Smul'skii
The geologic structure of the intermontane basins of Central Asia and the presence of gas and oil therein, by Chu-hsiang P'ang and G. E. Ryabukhin
A portable gamma ray logger and the estimation of grade and ore reserves in radioactive deposits with references to logging at Ouchi district Miyagi prefecture, by Shun-ichi Sano
Review section
Reference section

Jacob, H.
RECENT CONCLUSIONS CONCERNING BROWN-COAL AND PEAT PETROGRAPHY: IDEAS RELATED TO MACERAL CLASSIFICATION (Neure Ergebnisse der Braunkohlen- und Torf-Petrographie. Gedanken zur Mazeral-Klassifikation). Jan 63 [25]p. (figs. tables omitted) 17 refs.
Order from SLA $2.60 63-14060

Trans. of Geologische Rundschau (West Germany) 1961, v. 51, p. 530-546.

DESCRIPTORS: *Petrology, *Coal, *Peat, Classification.

The article proposes a petrographical nomenclature for peat and soft brown coal which conforms to bituminous coal nonmenclature, follows identical or similar principles and complys with technological points of view.

Since peat and soft brown coal are more heterogeneous than bituminous coal, a broader clasification is used. Five groups (Exinite, xylinite, detrinite, dopplerinite, and inertinite) are divided into 3 sub-groups. These are further subdivided into macerals.

Per'kov, N. A.
INTERPRETATION OF THE RESULTS OF LOGGING OF OIL WELLS: SELECTED PARTS. [1963] [55]p.
Order from OTS or SLA $5.60 63-18481

Trans. of mono. Interpretatsiya Rezul'tatov Karotazha Neftyanykh Skvazhin, Moscow, 1958, table of contents, introduction, tables, and figure captions.

DESCRIPTORS: *Well logging, Oils, Boreholes, Electrical equipment, Radioactive isotopes, *Petroleum, Rock (Geology), *Geology.

Velikin, A. B. and Frantov, G. S.
ELECTROMAGNETIC FIELDS APPLIED TO INDUCTION METHODS OF ELECTRICAL PROSPECTING: [REVIEW OF FOREIGN LITERATURE] ABSTRACTS, tr. by Alberta K. Garber. 6 May 63 [50p] 252refs
NBS Trans. T7-60.
Order from OTS or SLA $4.60 63-24027

Partial trans. of [Elektromagnitnye Polya, Primenyaemye v Induktsionnykh Metodakh Elektrorazvedki, Obzor Zarubezhnoi Literatury] Leningrad, 1962 [351p].

DESCRIPTORS: *Geophysical prospecting, Electromagnetic fields, Electrical properties, Electromagnetic waves, Geophysics, *Inductance, *Reviews, *Electromagnetism

Contents:
Introduction
Chapters I-VI (short extracts)
Literature

Mineralogy

Büssem, Wilhelm and Köberich, Fritz.
DEHYDRATION OF BRUCITE (Die Entwässerung des Brucits). [1963] [38]p. (foreign text included) 28 refs.
Order from SLA $3.60 63-18126

Trans. of Z[eitschrift für] Physikal[ische] Chem[ie, Leipzig] (Germany) 1932, v. 17B, no. 4/5, p. 310-326.

DESCRIPTORS: *Minerals, *Magnesium compounds, Hydroxides, *Dehydration, *Crystal structure, X-ray diffraction analysis

Kamentsev [I.] E.
INFLUENCE OF CRYSTALLIZATION CONDITIONS ON FOREIGN IMPURITIES IN QUARTZ LATTICE. [1963] 10p. 13 refs.
Order from OTS or SLA $1.10 63-18918

Trans. of Leningrad U. Vestnik (USSR) [1962, v. 17] no. 18 [Seriya Geologii i Geografii, no. 3, p. 109-112].

DESCRIPTORS: *Minerals, *Synthetic stones, *Quartz, *Crystallization, *Crystal lattices, Impurities, X-ray diffraction analysis.

By means of an examination of X-ray data of 81 synthetic quartz specimens, it was found possible to write the structural formula of quartz containing a maximum of structural impurities as:

$$R^{+}_{0.0009}(Al_{0.0009}Si_{0.9991})O_2.$$

X-ray studies on synthetic quartz produced at different growth velocities revealed that the quantity of Al in the lattice decreases as the growth velocity rises. The influence of growth velocity on changes in lattice parameters is used to explain the entrance mechanism of impurities into the quartz lattice during crystallization at different temperatures. The lattice parameters of 100 specimens of natural quartz, from known sources, were compared with their conditions of crystallization in the light of the above findings.

Lyakhovich, V. V. and Shevaleevskii, I. D.
THE ZIRCONIUM AND HAFNIUM RATIO IN ACCESSORY ZIRCON OF GRANITOIDS (O Sootnoshenii Tsirkoniya i Gafniya v Aktsessornom Tsirkone Granitoidov). [1963] [28]p. 21 refs.
Order from OTS or SLA $2.60 AEC-tr-5587

Trans. of #Geokhimiya (USSR) 1962, no. 5, p. 440-452

DESCRIPTORS: *Geochemistry, *Rock (Geology), *Granite, *Pegmatite, *Minerals, Zirconium compounds, Oxides, *Zirconium, *Hafnium, Distribution.

The value of the ZrO_2/HfO_2 ratio in accessory zircon of granitoids remains rather constant and ranges from 35-40. The more basic (hybrid) granitoid varieties--granodiorites, quartz diorites are characterized by the greatest value of this ratio (40-53) and the most acid (alaskites) are characterized by the least value (21-28). In the genetically bound rock series: granites-aplites - pegmatites - quartz veins, zircons from petmatites are most enriched in hafnium. The maximum enrichment in hafnium (3.0%) is observed in zircons from albitized granites. (Author)

Timofeev, P. P., Yablokov, V. S., and Bogolyubova, L. I.
THE ORIGIN AND GENETIC CLASSIFICATION OF THE HUMIC (BITUMINOUS) COALS OF THE PRINCIPAL COAL BASINS OF THE USSR (Die Entstehung und die Genetische Klassifikation von Humuskohlen der Hauptbecken der UdSSR). [1963] [20p] (foreign text included) 12refs
Order from SLA $1.60 63-20195

Trans. of Brennstoff-Chemie (West Germany) 1962, v. 43, no. 4, p. 97-105.

DESCRIPTORS: *Coal, *Minerals, Sources, Classification, *Economic geology, *Geochemistry, Lignin, Cellulose, Bitumens.

The principles of a genetic classification are explained. The distinction between the individual groups, classes,

and types, on the basis of the degree of decomposition and reduction in size of the lignin and cellulose bearing tissues (is explained). An attempt is made to trace the different stages of gelification and fusinization back to facies variations in the course of coalification. (Author)

Oceanography

DATA FROM THE FIRST PLENUM OF THE SECTION ON UNDERWATER RESEARCH, OCEANOGRAPHIC COMMISSION. 14 Oct 63, 77p 24refs JPRS: 21434.
Order from OTS $2.00 63-31934

Trans. of [Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya. Trudy [1962] v. 14, p. 5-6, 76-107, 116-130.

DESCRIPTORS: Scientific research, *Underwater, *Oceanology, Oceanographic equipment, *Marine biology, Oceanographic vessels, *Fishes, Breathing apparatus, Submarines, Light, Plankton, Hydrostats, Depth indicators.

Contents:
Underwater research section of the Oceanographic Commission, USSR Academy of Sciences, and its tasks, by O. B. Mokievskii
Underwater research at the Sevastopol Biological Station, Ukrainian Academy of Sciences, by M. P. Aronov
Observations on the operation of fishing trawls in the Black Sea, by B. V. Vyskrebentsev
The place of underwater observations in ichthyological research, by D. V. Radakov
Research under ice with an aqualung, by D. S. Paylov and D. S. Nikolaev
Biological research on the submarine "Severyanka", by M. I. Ryzhenko
Underwater observations on the reaction of herring to artificial light, by O. A. Sokolov
Observations on plankton from the submarine "Severyanka", by N. S. Khromov
Requirements for a research submarine, by O. A. Sokolov
Observations of commercial fish from Soviet hydrostats, by O. N. Kiselev
Designing a Soviet bathyscaphe, by M. N. Diomidov.

MARINE SURVEYING AND ABSERVATIONS. 10 Oct 63, 20p 2refs JPRS: 21410.
Order from OTS $0.75 63-31918

Trans. of Okeanologiya (USSR) 1963, v. 3, no. 4, p. 706-714, 750-752.

DESCRIPTORS: *Oceanology, *Marine meteorology, *Marine geophysics, Pacific Ocean, *Conferences, Magnetometers.

Contents:
Certain problems in the method for making meteorological observations in the open sea, by Yu. A. Volkov
Magnetic observations in the Pacific Ocean, by M. M. Ivanov
Conference on Problems of Marine Magnetic Surveying, Moscow, Apr 62, by M. M. Ivanov.

Kuznetsov, V. V.
THE WHITE SEA AND THE BIOLOGICAL CHARACTERISTICS OF ITS FLORA AND FAUNA: SELECTED CHAPS, tr. by M. Slessers. 1963 [42]p. NOO Trans-172
Order from OTS or SLA $4.60 63-23758

Trans. of mono. Beloe More i Biologicheskie Osobennosti Ego Flory i Fauny, Moscow/Leningrad, 1960, p. 40-44, 69-90.

DESCRIPTORS: *Marine biology, *White Sea, *Oceanology, Tides, Ocean currents, Ice, Marine meteorology,

Contents:
On the possibility of physical-geographical changes in the White Sea influenced by the continental runoff, tide currents and the winter fast ice
Some of the hydrometeorological characteristics of the White Sea.

Physics of the Atmosphere

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly report no. 37 reviewing Soviet Developments in Selected Problems in Astrophysics and Geophysics; AID Work Assignment no. 3. 25 July 63 [16]p. AID Rept. P-63-98.
Order from OTS or SLA $1.60 63-23533

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Solar radiation, Ionosphere, *Atmospheric electricity, *Meteorology, Reviews, Astrophysics, Geophysics.

Contents:
Solar radiation and the ionosphere
Atmospheric electricity
Meteorology of the upper atmosphere.

Al'pert, Ya. L., Belyanski, V. B., and Mityakov, N. A.
INVESTIGATION OF THE STRUCTURE OF THE IONOSPHERE WITH COHERENT RADIO FREQUENCIES FROM THE SATELLITE "COSMOS" (PRELIMINARY RESULTS) tr. by C. R. Haave. 6 Aug 63, 22p 4refs APL/JHU TG 230-T395.
Contract NOw 62-0604-c
Order from OTS $0.75 63-11696

Trans. of Geomagnetizm i Aeronomiya (USSR) 1963, v. 3, no. 1, p. 10-24.
Another trans. is available from OTS $1.50 in 63-21757, JPRS-19069, 7 May 63, 50p.

DESCRIPTORS: *Ionosphere, *Electron density, Measurement, *Satellites (Artificial), Radio transmission, Doppler effect, Radiofrequency spectroscopy, Radio receivers, Radio waves

Results of a preliminary analysis of differential doppler shift ($\delta\phi$) measurements made with coherent radio waves (20.005 and 90.0225 mc) from the satellites Cosmos I and Cosmos II are presented. New data were obtained on the electron concentration (N_C) gradient $\left(\left|\frac{\Delta N_C}{\Delta S}\right| \approx (1 \div 4)\ 10^3\ 9\text{л}/\text{CM}^3\ 1/\text{KM}\right)$ in large-scale inhomogeneities along the orbital path S of the satellite and on their linear dimensions ($\rho_S \approx 100$ to 500 km). In one experimental method, the space modulation $\delta\phi$ permitted determination of the general spectrum of the linear dimension ρ_O of the ionospheric inhomogeneities in the range of 1 to 300 km and more. A new maximum in the inhomogeneity spectrum $W(\rho_O)$ was observed at $\rho_{om} \approx 100$ to 130 km, and the known maximum at $\rho_{om} \approx 2$ to 6 km was reconfirmed. The angle of radio wave refraction $\varepsilon\varphi$ in the ionosphere varies strongly from point to point and has a maximum value of $\delta\varphi \approx 3$ to 4^o at 20 mc. When the value of N_C along the orbit increases or decreases, then $\delta\varphi$ decreases or increases respectively. In those portions of the orbit where $N_C \approx$ const., the angle of refraction $\delta\varphi$ also changes very little. (Author)

Harteck, P. and Reeves, R.
NEW STUDIES ON CHEMICAL REACTIONS IN THE ATMOSPHERE. 1 Oct 63, 18p 44refs JPRS: 21273.
Order from OTS $0.50 63-31858

Trans. of #Uspekhi Khimii (USSR) 1963, v. 32, no. 7, p. 882-895 (originally pub. in Angewandte Chemie (West Germany) 1962, v. 74, no. 1).

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Chemical reactions, *Recombination reactions, Ions, Simulations, *Shock waves

Results are given, based largely on laboratory simulations, concerning studies on recombination, bimolecular, ionic, and excited molecule reactions in the "chemosphere"

Kozhevnikov, N. I., Makarova, E. A., and Sitnik, G. F.
BAND MODEL FOR INFRARED RADIATION ABSORPTION BY WATER VAPOR. [1963] 11p. 10 refs.
Order from OTS or SLA $1.60 63-18165

Trans. of Moscow U. Vestnik. Ser[iya 3]: Fizika, Astronomiya (USSR) 1963 [v. 18] no. 1, p. 54-61.

DESCRIPTORS: Atmosphere, *Infrared radiation, Absorption, *Water vapor, Infrared spectroscopy, *Atmosphere models, *Astrophysics, *Spectroscopy

Certain experimental results are examined by a theoretical band model of absorption. Results are obtained for the calculated band which contains forbidden lines. (Author)

Luyanas, V. I.
ON THE PROBLEM OF TRITIUM ORIGIN IN THE ATMOSPHERE. [31 Jul 63] 8p 13refs
Order from OTS or SLA $1.10 63-20129

Trans. from [Akademiya Nauk Litovskoi SSR, Vilna. Trudy. Seriya] B, 1963, no. 1(32).

DESCRIPTORS: *Atmosphere, *Tritium cosmic rays, Fast neutrons, Protons, *Hydrogen, Radioactivation analysis, Labeled substances.

The calculation of formation of the radioactive isotope of hydrogen tritium in the atmosphere under the action of cosmic rays is given. With the energy spectrum of "evaporation" neutrons: $N(E)dE = kEe^{-E}dE$ and the spectrum of "fast" neutrons: $N(E)dE = zE^{-2}e^{-160E^{-2}}dE$ the maximum possibility of tritium production by the neutrons of cosmic rays on the average for the earth is 0.12 atoms of tritium 1 cm^2/sec. The production of H^3 in "stars" is estimated to be of magnitude 0.24 of tritium atom 1 cm^2/sec. The possibility of tritium origin under the action of protons of the internal radiation ring of the earth, as well as the direct penetration of solar tritium into the earth's atmosphere, is shown. (Author)

ENGINEERING

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 285 (ELECTRONICS, ENGINEERING AND SPACE RESEARCH SERIES).
4 Sep 63, 13p. JPRS: 20915.
Order from OTS $0.50 63-31672

Consists of abstracts of articles from the scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, *East Germany, *Hungary, Acoustics, Networks, Electron tubes, Phase distortion, Power amplifiers, Conferences, Transistors amplifiers, Filters (Electromagnetic wave), Circuits, Attenuation, Photomultipliers, Information retrieval, Microwaves, Measuring devices (Electrical and Electronic), Piezoelectric gages, Machine tools, Salts, Particle size, Textile industry, Shielding, Gamma emission, Stresses, Beams (Structural), Climatology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 288 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
9 Sep 63, 15p. JPRS: 20972.
Order from OTS $0.50 63-31703

Consists of abstracts of articles from the scientific and technical journals of East Germany, Hungary and Yugoslavia.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, *East Germany, *Hungary, *Yugoslavia, Milling machines, Metallurgy, Computers, Climatology, Amplifiers, Automation, Control systems, Entropy, Ceramic materials, Railroad tracks, Capacitors, Hydraulic systems, Mining engineering, Glass, Radio waves, Cooling and ventilating equipment, Amplitude modulation, Oscillators, Magnetic cores, Telephone equipment.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 295 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 12 Sep 63, 7p. JPRS: 21048.
Order from OTS $0.50 63-31746

Abstract trans. of Acta Technica (Hungary) 1963, v. 43, no. 1/2, p. 3-21, 23-69, 71-79, 83-258.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, Geodesics, Gravity, Earthquakes, Meteorology, Volcanoes, Geophysics, Satellites (Artificial), *Hungary.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHANICAL JOURNALS NO. 311 (ELECTRONICS, ENGINEERING AND SPACE RESEARCH SERIES). 3 Oct 63, 5p JPRS: 21311.
Order from OTS $0.50 63-31876

Abstract trans. of Polska Akademia Nauk. Bulletin: Serie des Sciences Techniques, 1963, v. 11, no. 6, p. 21-34, 183-223, 225-237.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 315 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 7 Oct 63, 23p JPRS: 21346.
Order from OTS $0.75 63-31893

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Yugoslavia.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, Research program administration, Computer logic, Parametric amplifiers, Tunnel diodes, Radio repeaters, Television antennas, Earphones, Video amplifiers, Storage batteries, Magnetic recording systems, Electrical engineering, Silicon, Semiconductors, Potentiometers, Cathodes, Computer storage devices, Rectifiers, Ferroelectric materials, Reliability (Electronics), Noise (Radio), Electrocardiography, Plasma physics, Plastics, *Czechoslovakia, *Yugoslavia, Inventions.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 318 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 10 Oct 63, 7p JPRS: 21404.
Order from OTS $0.50 63-31913

Abstracts trans. of Slaboproudy Obzor (Czechoslovakia) 1963, v. 24, no. 9, p. 501-543, 555-556, 558-559.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight.

Grachev, B. A. and Leonov, B. Z.
TELEMETERING THE ROTATIONAL SPEED OF A TURBODRILL SHAFT. [1963] 5p.
Order from ATS $8.00 ATS-72Q70R

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1963, v. 41, no. 1, p. 19-23.

DESCRIPTORS: *Telemeter systems, Telemetering data, Velocity, *Rotation, Drills, Turbines, Well drilling, *Shafts.

Kalinin, A. G. and Belorussov, V. O.
THE EFFECT OF FORMATION ANISOTROPY ON THE DEVIATION OF WELLS. [1963] 5p.
Order from ATS $7.75 ATS-49Q70R

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1963, v. 41, no. 3, p. 8-12.

DESCRIPTORS: Well drilling, *Stratigraphy, Anisotropy, Deflection.

Ryabov, B. A., ed.
NAVIGATION AND GYROSCOPIC DEVICES. 7 June 63 [195]p. 33 refs. FTD-TT-63-473.
Order from OTS or SLA $13.50 63-23737

Unedited rough draft trans. of Aviatsionnyi Institut, Moscow. Trudy (USSR) 1962, v. 147 [139]p.

DESCRIPTORS: *Navigation, *Gyroscopes, *Inertial navigation, Instrumentation, *Acceleration, *Accelerometers, Errors, Feedback, Dynamics, Functions, Circuits, *Oscillators, Mathematical prediction.

Contents:
Absolute acceleration of the sensing element of an inertial navigation system, by I. I. Pomykaev
Additional acceleration and a general method of its determination, by I. I. Pomykaev
Derivation of optimal processes in second-order dynamic systems, by A. V. Repnikov
The theory of combined navigation systems, by A. S. Semenov
On one error of a compensation accelerometer, by V. N. Akimov
Calculation of accelerometers with force compensation, by L. A. Dmitrochenko
Feedback accelerometers, by A. S. Semenov
Evaluation of the dynamic accuracy of certain systems, by V. N. Akimov
Theoretical principles of determining transfer functions and a method of selecting the permissible errors of the main circuit of navigation accelerometers, by I. I. Pomykaev
Elimination of temperature errors in measuring circuits with force compensation, by N. Ya. Vovchenko
Symmetrical multistable multivibrator, by A. M. Dymshits
Estimate of the operational accuracy of feedback measuring systems, by N. A. Chekhonadskii.

Sotskov, B.
DEVELOPMENTS IN AUTOMATION. 24 Sep 63, 6p JPRS: 21205.
Order from OTS $0.50 63-31818

Trans. of Radio, Moscow (USSR) 1963, no. 7, p. 4-6.

DESCRIPTORS: *Automation, *Industrial production, *Industrial research, *Control systems, Electronics, Control theory, Optimalization, Computers, Cybernetics.

A general discussion of the applications of automatic control systems to various technological processes.

Chemical Engineering

GENERAL OUTLINE OF MANUFACTURE: CHAPS. 1-3 (SELECTED PARTS). [1963] 10p.
Order from SLA $1.10 63-16211

Partial trans. (excerpts) from an unidentified mono., n.p., n.d.

DESCRIPTORS: *Fertilizers, *Phosphates, *Industrial production, *Machines, *Electrical equipment, Safety, Gypsum, Calcination, Sulfates, Carbonates, Sodium compounds, Ores (Non-metallic)

Contents:
Calcined phosphatic fertilizer
1. Characteristics and effectiveness of calcined phosphate fertilizers
2. Raw material
3. Manufacturing method: manufacturing process and major equipment

Machinery and equipment (including building and fixtures) and their maintenance
1. Major machinery structure for the manufacture of calcined phosphate fertilizers
2. Manufacturing order for the manufacture of calcined phosphate fertilizers
3. Manufacturing order for the manufacture of mixed fertilizers and machinery and equipment
4. Manufacturing order for the manufacture of calcinated superphosphatic fertilizers and equipment
5. Manufacturing order for the manufacture of side-product gypsum and equipment and machinery

Electrical equipment and safety

IMPROVEMENTS IN ORGANIC COMPOUNDS. [1963] 13p
Order from OTS or SLA $1.60 63-20156

Trans. of first addition 43,972 to French patent 720,474, gl. 14, cl. 1, (main pat. taken out 11 Jul 31) appl 9 Aug 33, issued 9 Jul 34, pub. 25 Sep 34, by Kinetic Chemicals, Inc., U.S.A. (appl. filed 10 and 21 Aug 32, U.S.A.).

DESCRIPTORS: *Organic compounds, *Hydrocarbons, *Fluorination, Aliphatic compounds.

IMPROVEMENTS IN THE MANUFACTURE OF ACYCLIC FLUORINATED HYDROCARBONS (Perfectionnements à la Fabrication des Hydrocarbures Acycliques Fluorés). [1963] [25p] (foreign text included) 1ref
Order from OTS or SLA $2.60 63-20157

Trans. of French patent 730,874, gr. 14, cl. 1, appl. 22 Jul 31, issued 23 May 32, pub. 25 Aug 32, by E. I. DuPont de Nemours and Co., U.S.A. (appl. 23 Jul 30, U.S.A.).

DESCRIPTORS: *Hydrocarbons, *Fluorination, *Aliphatic compounds, Organic compounds, Carbon tetrachloride, Calcium compounds, Fluorides, Manufacturing methods.

METHOD OF DISTILLATION WITH THE LUYNES-BORDAS APPARATUS (MINISTERIAL INSTRUCTION OF 10 DEC 25 ANNEXED TO THE DECREE OF 25 NOV 25). [1962] 4p.
Order from SLA $1.10 63-10451

Trans. of Revue Pétrolifère (France) 1927, 5 Mar, p. 22ff.

DESCRIPTORS: Gasoline, *Distillation.

PROCEDURE FOR THE DEGASIFICATION OF LIGHT METALS AND ALLOYS. [1963] 4p
Order from OTS or SLA $1.10 63-18959

Trans. of Belgian patent 496,600, filed 26 Jan 50, granted 15 Jul 50, pub. 16 Oct 50, by Solvay et Cie.

DESCRIPTORS: *Metals, *Alloys, *Degasification, Foundries, Hexachlorocyclohexanes, Grain structures (Metallurgy), Refineries.

PROCESS AND APPARATUS FOR EXTRACTIONS OF MATERIALS AND MIXTURES OF MATERIALS. [1963] 4p (figs omitted)
Order from OTS or SLA $1.10 63-18202

Trans. of French patent 845,116 [1939].

DESCRIPTORS: *Solvent extraction, *Mixtures, Separation, Solvents, Vapors, Vaporization, Heat transfer, Heat

PROCESS FOR IMPROVING THE PROPERTIES OF SUBSTANCES IN THE DESIRED FORM, SUCH AS POLYACRYLONITRILE AND MIXED POLYMERS OF ACRYLONITRILE. [1963] 3p.
Order from OTS or SLA $1.10 63-18627

Trans. of French patent 905,038 [cl. 8, gr. 14] I. G. F[arbenindustrie] A. G.
Another trans. is available from SLA as no. 3460, 22 Nov 45, 3p.

DESCRIPTORS: *Acrylonitrile polymers, Acrylonitriles, Polymers, Mixtures, *Fibers (Synthetic), Filaments, Films, Wetting agents, Dyes, Chemical properties.

A process for the improvement of the properties of substances in the desired form, especially films and fibres of polyacrylonitrile and mixed polymers of

acrylonitrile distinguished by the fact that the formed articles are subjected to baths or vapors of acids or bases is described. The treating baths may contain wetting and swelling agents, dyes, non-solvent organic liquids and if desired, neutral salts. (Author)

PROCESS FOR OBTAINING PURE GAMMA ISOMER OF HEXACHLOROCYCLOHEXANE. [1963] [12p] 2refs
Order from OTS or SLA $1.60 63-18963

Trans. of Belgian patent 491,132, 14 Sep 49, cl. S. 49/8, by Solvay et Cie.

DESCRIPTORS: *Hexachlorocyclohexanes, Molecular isomerism, Isomeric transitions, Benzenes, Chlorination, Crystallization, *Gammexane.

The invention relates to a process of extraction of the gamma isomer of hexachlorocyclohexane from technical products, either crude or enriched in gamma isomer, obtained by the chlorination of benzene.

PROCESS FOR THE MANUFACTURE OF 1, 4 DIOXANE. [1963] 2p
Order from OTS or SLA $1.10 63-20186

Trans. of French patent 711,595, appl. 19 Feb 31, delivered 30 Jun 31, pub. 12 Sep 31, by Carbide and Carbon Chemicals Corp., U. S. A. (appl. 20 Feb 30, U. S. A.).

DESCRIPTORS: *Dioxides, *Ethylenes, *Heterocyclic compounds, Manufacturing methods.

PROCESS FOR THE REDUCTION OF DISSOCIATION OF COMPOUNDS BY MEANS OF ELECTRIC RED HEAT. [1963] 10p.
Order from OTS or SLA $1.10 63-18248

Trans. of German patent 40354, cl. 12, pat. 16 Jan 1886.

DESCRIPTORS: *Electric furnaces, *Dissociation, Electric arcs, Pressure.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 113. 5 Sep 63, 50p JPRS: 20935.
Order from OTS $1.50 63-31680

Trans. of Bukhgalterskii Uchet (USSR) 1963 [v. 20] no. 7, p. 1-4; Partiinaya Zhizn' (USSR) 1963, no. 14, p. 34-37; Partiinaya Zhizn' Kazakhstana (USSR) 1963 [v. 33] no. 6, p. 55-57; and 22 selected articles from 1963 issues of 14 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Ammonium radicals *Phosphates, Management engineering, *Fibers (Synthetic), Fibers, Personnel management, *Synthetic rubber, *Glass textiles, Plastics, Carbon compounds, Sulfides, Electric furnaces, Petroleum, Refineries, Costs, Melamine, Phenols, *Thermoplastics, Generators, Acetylenes, Glass, Containers, Methyl radicals, Acrylic resins.

Contents:
Creative activity at the Lisichansk chemical combine, by A. Krilov
Lagging construction of the ammonium phosphate shop at the Dzhambul superphosphate plant, by S. Mal'tsev and others
Analysis of the utilization of the production capacities of new enterprises, by V. Obronov
Chemical progress in Severodonetsk, by L. Estrin and others
The Svetlogorsk artificial fiber plant needs help
Help wanted by "Polivinilatsetat" plant
Cord made by the Daugavpils synthetic fiber plant imeni Leninist Komsomol, by V. Kol'tsov
Speed up in the construction of the first stage of the Omsk synthetic rubber plant, by N. Mezyurov and N. Cherpov
Progress in the production of glass fiber
Chemical production in the Moscow economic region
Carbon disulfide from electric furnaces
Lower production cost at the Novoufimskii petroleum refinery
Construction of an artificial fiber plant in Cherkassy
Melamine production at the Kirovakan chemical combine
Production of phenol in Kazan'
Increased conversion of thermoplastics
Competition for laboratory supervisors
Help wanted by the Riga superphosphate plant
The Valmiera glass fiber plant is in operation
Help wanted by the experimental-design bureau of synthetic products in Tula
Generators for sale
Acetylene for sale
Glass ampoules for sale
New combine in Novgorod to produce raw materials for synthetic products
Production of methylacrylate at the Saratov synthetic alcohol plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 115. 11 Sep 63, 79p.
JPRS: 21013.
Order from OTS $2.25 63-31725

Trans. or Khimicheskaya Promyshlennost' (USSR) 1963, no. 5, p. 321-330, 393, Radio, Moscow (USSR) 1963, no. 7, p. 3; and 14 selected articles from 1963 issues of 11 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Fertilizers, Safety, Industrial plants, *Glycerols, *Sulfur, *Alums, Conferences, Sodium compounds, *Glass textiles, Fillers, Plastics, *Styrene plastics, *Synthetic rubber, Polymers, *Chromium compounds.

Contents:
Development of the basic chemical industry following the May (1958) plenum of the CC CPSU, by V. V. Krasnushkin

Chemical industry in the Moscow region, by I. I. Karataev
Activities of the State Committee for Chemistry
News from the chemical plants in the Transcaucasus
A glycerin-purifying installation is developed in Voronezh
Progress at the Gaurdak sulfur combine, by S. Shukurov
Expanding the production of alum
Develop the Transcaucasian chemical industry at a fast rate
Increase the efficiency of scientific research institutes in Irkutskaya oblast, by S. Shurygin
Automating production at the Slavyansk soda combine
Expedite the construction of the Severodonetsk fiber-glass-reinforced plastics plant
Expedite the production of styrene in Gorlovka, by V. Tsepovskii and I. Bogorelyak
Expedite the expansion of the Efremov synthetic rubber plant, by V. Avtonomov
Promote the use of secondary polymers, by K. Moskatov
Building the Aktyubinsk chrome compounds plant
Expedite the development of large-scale chemical industry
Expand chemical industry in the Transcaucasus
Expanding the production of chemical fertilizers, by G. Annenkov and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 117. 2 Oct 63, 50p
JPRS: 21297.
Order from OTS $1.50 63-31869

Trans. of 19 selected articles from 1963 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Pens, *Industrial plants, Ores (Metal sources), *Fertilizers, *Dyes, *Pesticides, *Ores (Non-metallic), *Rubber, Synthetic rubber, *Sulfuric acid, *Pipelines, Copper, Potassium.

Contents:
"Plastmass" factory produces inferior fountain pens, by A. Chikvinidze
Construction of Akhtala concentrating mill is lagging, by A. Davoyan
Construction progress at the Grodno nitrogen fertilizer plant
Production of auxiliary chemicals at the Ivanovo chemical plant, by T. Shchaveleva
Artashat wine plant produces natural food coloring materials
Fertilizer and pesticide manufacturing news
Glauberite: a new chemical raw material
Krasnoyarsk plant produces improved rubber
The chemical industry in the Turkmen SSR
Achievements of the Erevan synthetic rubber plant, by N. Babayan
More sulfuric acid needed
The outlook for the sulfuric acid industry, by V. Krasnushkin
Problems of the Sumgait sulfuric acid shop, by V. Anisimov
Voskresensk chemical combine produces fertilizer and sulfuric acid
The case for sulfuric acid pipelines, by P. Luk'yanov
Design errors at the Sredneural'sk copper smelting plant have serious consequences, by V. Sofronov
Baltic chemical industry resolves to intensify work
Large-scale chemical industry in Belorussia
Working enthusiasm at the Berezniki potassium combine, by G. Popov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 118. 7 Oct 63, 73p
JPRS: 21338.
Order from OTS $2.00 63-31889

Trans. of 21 selected articles from Aug 63 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Industrial plants, Construction, Chromium compounds, Coke, Potassium compounds, *Waste gases, *Ores (Non-metallic), *Reagents, *Phthallic anhydride, Phosphates, Fertilizers, Conferences, Synthetic rubber, *Food, *Expanded plastics, *Thermal insulation, *Sulfuric acid.

Contents:
Building the Aktyubinsk chromium compounds plant
Building the Avdeevka coke-chemical plant, by S. Andrievskii
Building the Soligorsk potash combines
New method of expelling waste gases at Kirovakan, by V. Belyaevskii
Promote competition between sister plants in different economic regions
Glauberite utilized as a chemical raw material in the Kirgiz SSR
Products offered by the Khar'kov chemical reagents plant
State of affairs in construction of Chemical industry enterprises examined by Bureau of Leningradskaya Oblast Party Committee
News of large-scale chemical industry in Kazan', Roston and Krasnodarskii Krai
Production of phthalic anhydride at Rubezhnoe chemical combine should be improved, by A. Bugaev
Chemical industry developments in the Transcaucasus
Increasing production at the Okhuta chemical combine, by O. Panin
Development of chemical industry in Belorussia, by S. Cherepovich
Assistance needed by the Sumy superphosphate plant, by V. Panenko and others
Organizing the Tashkent plastic products plant, by I. Rogov
Conference of Central Asian Chemical-Industry Workers and Builders, Baku and Sumgait
Development of synthetic rubber industry, by L. Morozov
Replacement of foodstuffs with synthetics as raw material for chemical products, by L. Koposov and others
Greater use of foam plastics as heat-insulation material needed, by A. Lepilkin and others
Appeal to chemical-industry workers in the Ukraine
Importance of sulfuric acid production, by A. Amelin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 31. 10 Sep 63, 15p.
JPRS: 21007.
Order from OTS $0.50 63-31721

Trans. of Sovetskie Profsoyusy (USSR) 1963 [v. 19] no. 12, p. 19; and 7 selected articles from 1963 issues of 6 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Machines, Chemical industry, Industrial plants, Personnel relations, *Machine tool industry.

Contents:
Machine building: an important branch, by L. Kostandov
Machine building: an important branch, by G. Keshelava
"Seven with a spoon...", by Vl. Kusov
Find some possibility, by V. Verbin and others
Selected short news items

Aleksandrov, I. A. and Skoblo, A. I.
DETERMINATION OF INTERTRAY-ENTRAINMENT OF THE LIQUIDS IN FRACTIONATORS. [1963] [7]p. 11 refs.
Order from OTS or SLA $1.10 63-18405

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962 [v. 7] no. 8, p. 53-58.

DESCRIPTORS: *Distillation, *Liquids, Containers, Mathematical analysis, Towers (Chemistry).

An equation is proposed for determination of the liquid entrainment in industrial fractionators and hot models from data on tray efficiency and it was confirmed by experimental results of a series of authors. (Author)

Alquist, F. N., Wasco, J. L., and Kauer, K. C.
A PROCEDURE FOR PERFECTING THE TRANSFORMATION OF HEXACHLOROCYCLOHEXANE INTO TRICHLOROBENZENE. [1963] 4p
Order from OTS or SLA $1.10 63-18990

Trans. of Belgian patent 504,274, filed 27 Jun 51, granted 14 Jul 51, by The Dow Chemical Co., U.S.A. (filed 14 Mar 49, U.S.A.).

DESCRIPTORS: *Hexachlorocyclohexanes, Transformations, *Chlorides, *Benzenes, Insecticides.

A procedure consisting essentially of heating a compound of the group consisting of benzene hexachloride, the hexachloride of monochlorobenzene, and the hexachloride of dichlorobenzene, with a quantity of anhydrous aluminum chloride amounting to 0.5 to 5% by weight to a temperature greater than 90°C, a temperature at which hydrochloric acid is freed, until 3 moles of hydrogen chloride gas are liberated for 1 mole of charge, and recovering the polychlorobenzenes obtained. (Author)

Bachmann, R.
PREPARATION PROBLEMS OF THE GERMAN POTASSIUM INDUSTRY. [1953] 15p. (figs. omitted).
Order from SLA $1.60 63-16284

Trans. of [Zeitschrift für Erzbergbau und Metallhüttenwesen (West Germany) 1953, v. 8, p. B109-B114].

DESCRIPTORS: *Potassium compounds, *Minerals, *Flotation (Separation), Solutions, Chemical industry.

Beider, P. Ya., Kogan, S. M., and Polak, A. V.
SOME PROBLEMS OF THE DEVELOPMENT AND LOCATION OF OIL REFINERIES. 23 Sep 63, 7p JPRS: 21180.
Order from OTS $0.50 63-31808

Trans. of Neftyanoe Khozyaistvo (USSR) 1963 [v. 41] no. 8, p. 1-5.

DESCRIPTORS: *Petroleum industry, *Refineries, Chemical industry, *Chemical engineering, *Petroleum, Sulfur, Pipelines, Transportation, Distribution (Economics).

The necessity for the development of technological processes for the refining of high sulfur crude oil and for the location of the refineries as close as possible to areas of consumption of oil products is discussed.

Bogdanov, N. F.
THE ODOR OF PARAFFIN AND ITS ELIMINATION. [22 Apr 63] 11p.
Order from OTS or SLA $1.60 63-18396

Trans. of Groznenskii Neftyanik (USSR) 1936, v. 6, no. 1/2, p. 79-83.

DESCRIPTORS: *Synthetic waxes, *Odors, Containers, Storage, Distillation, Chemical analysis, Separation, Hydrocarbons.

For abstract see Chemical Abstracts 31: 2803, 1937.

Edeling, Kurt.
SPRAY DRYING (IMPORTANCE, PROBLEMS, AND FUTURE PROSPECTS). [1963] 22p (figs omitted) 30refs
Order from SLA $2.60 63-18550

Trans. of V[erein] D[eutscher] I[ngenieur]. Z[eitschrift]. Beiheft Verfahrenstechnik (Germany) 1942, no. 2, p. 49-56.

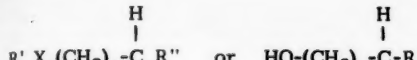
DESCRIPTORS: *Driers (Apparatus), Atomization, *Powders, Chemical industry

Fuchsman.
METAL ALCOHOLATES AND PROCESS FOR THEIR PREPARATION. [1963] 13p 1ref
Order from OTS or SLA $1.60 63-20029

Trans. of French patent 1,300,521, appl. 14 Sep 61, delivered 25 Jun 62, by Ferro Corp.

DESCRIPTORS: *Alcohols, Metals, Salts, Hydroxides, Chemical reactions, Manufacturing methods, *Nickel compounds, *Sodium compounds, *Metalorganic compounds.

Improved process for manufacture of metal alcoholates in which the metal replaces the hydrogen of an alcoholic hydroxyl by reacting a divalent metal salt of an alifatic monocarboxylic acid containing 2-30 carbons with an alcohol of the general formula;



were R' is alkyl, aryl, alkylaryl, aralkyl, cycloalkyl, alkoxyalkyl, alkoxyaryl, aroxyalkyl, alkoxycycloalkyl, cycloalkoxyalkyl, hydroxyalkyl, hydroxycycloalkyl or hydroxyalkoxyalkyl, X is O or S and R" is hydrogen or a radical like R' and n is 1 or 2. Polyalkylenes stabilized by introduction of a stabilizer composition made from a monosulfide of an o, o'-bis-(p-alkylphenol) and a nickel alcoholate obtained from the above process. (Author)

Hausen, H.
POSSIBILITIES OF KAPITZA'S PROCESS OF AIR LIQUEFACTION (Aussichten des Luftverflüssigungsverfahrens von Kapitza). [1963] [13p] (foreign text included) 10refs
Order from SLA $1.60 63-18119

Trans. of Zeitschrift für die Ges[amte] Kälte-Industrie (Germany) 1941, v. 48, no. 2, p. 24-28.

DESCRIPTORS: *Air, *Liquefied gases, Turbines, Compressors, Manufacturing methods, Cooling, Pressure.

Isagulyants, V. I. and Machus, F. F.
ALKYLATION OF PHENOLS. II. PREPARATION OF ALKYLPHENOLS FROM PENTENES OF CRACKED GASOLINE. [1961] 3p. 4 refs.
Order from OTS or SLA $1.10 62-10894

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 227-237.
Also available from OTS or SLA $2.60 in 61-20402 [1961] 24p.

DESCRIPTORS: *Alkylation, *Phenols, *Alkyl radicals, *Pentenes, Distillation, Gasoline.

Kal'manovich, M. B. and Ishkin, I. P.
CONDITIONS OF SIMULTANEOUS PRODUCTION FROM AIR OF TECHNICALLY-PURE OXYGEN AND NITROGEN [Usloviya Odnovremennogo Polucheniya iz Vozdukha Tekhnicheski Chistykh Kisloroda i Azota]. [1963] 16p. 10 refs.
Order from OTS or SLA $1.60 63-18265

Trans. of [Khimicheskaya Promyshlennost' (USSR) 1939] v. 16, no. 9, p. 12-15.
Another trans. is available from SLA as RT-2157, 11p.

DESCRIPTORS: *Oxygen, *Nitrogen, Production, *Towers, (Chemistry), Design, Operation.

Kamzolkin, V. V., Bashkirov, A. N., and Lodzik, S. A.
COMPOSITION OF THE ALCOHOLS PRODUCED BY DIRECT OXIDATION OF PARAFFIN HYDROCARBONS UNDER INDUSTRIAL CONDITIONS. [1963] [12p] 6refs
Order from OTS or SLA $1.60 63-20215

Trans. of Neftekhimiya (USSR) 1961, v. 1 [no. 2] p. 260-266.

DESCRIPTORS: *Hydrocarbons, Oxidation, *Alcohols, Acetates, Glycols, Separation, Chromatographic analysis, Ketones, Industrial research.

It was shown, that alcohols and their acetates can be separated from glycols and their acetates by the method of chromatography on silica-gel. Application of the method to the investigation or composition of the industrial alcohols, industrially produced by direct oxidation of paraffin hydrocarbons, showed that about 15% of glycols and small amounts of hydrocarbon, ketones and ketone-alcohols were contained aside of the alcohols in this product. Experimental data found in the present work permit the assumption, that neutral, bifunctional oxygenated compounds are formed in this process, basically without destruction of carbon skeleton in molecule, analogously to the neutral monofunctional compounds (alcohols, ketones) (Author)

Kazanskii, B. A., Dorogochinskii, A. Z. and others.
DEHYDROGENATION OF ISOPENTANE TO ISOAMYLENES ON THE ALUMINA-CHROMIA-POTASSIA CATALYST. [1963] [13p] 16refs
Order from OTS or SLA $1.60 63-20214

Trans. of Neftekhimiya (USSR) 1962, v. 2, no. 4, p. 448-456.

DESCRIPTORS: *Catalysts, Oxides, Potassium compounds, Chromium compounds, Aluminum compounds, *Pentanes, Dehydrogenation, *Pentenes, Ethylenes.

A systematic study was made on dehydrogenation of isopentane to amylenes upon the stationary and fluidized catalyst K-544, which was stable; catalyst consumption did not exceed 0.47 wt. % of raw material, which permits its use as mobile catalyst. Regeneration rate, i.e. coke burning rate in most inaccessible layers, was 20 ltr/ltr/hr. on aluminosilicate catalysts. Yield in isoamylenes, at 540 C and a space velocity of 1 hour -1, was 30-31 wt. %, referred to the raw-material, with a total yield of 34-38 wt. % of unsaturated C_5 hydrocarbons. (Author)

Korneichuk, G. P.
GRADIENTLESS REACTORS FOR INVESTIGATION OF KINETICS OF HETEROGENEOUS CATALYTIC PROCESSES. [1963] [3]p. 4 refs.
Order from OTS or SLA $1.10 63-18833

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 4, p. 518-[519].

DESCRIPTORS: *Towers (Chemistry), Catalysis, Reaction kinetics, Reciprocating pumps.

A construction is proposed for two gradientless reactors with improved heat removal: (a) a reactor with a piston-turbulizer, (b) a reactor with a piston-pump of circulation. The heat removal improvement is reached through catalyst disposition in the reactors exit tube and placing of the reactor into a heat abstracting medium. (Author)

Krupp, H.
MAGNETIC OXYGEN DETERMINATION USING A HOT WIRE ARRANGEMENT. [1962] [23]p. 11 refs.
Order from SLA $2.60 62-20072

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1955, v. 27, no. 2, p. 79-83.

DESCRIPTORS: *Wire, *Connection, Chemical analysis, *Oxygen, Magnetic fields, Magnetic properties, *Gas analysis.

Lavrovskii, K. P., Brodskii, A. M., Musaev, I. A., Sanin, P. I., and Rumyantsev, A. N.
PRODUCTION OF HIGHER NORMAL α-OLEFINS BY HIGH-SPEED CRACKING OF PARAFFINIC PETROLEUM PRODUCTS. [1963] [11p] 15refs
Order from OTS or SLA $1.60 63-20209

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 4] p. 487-494.

DESCRIPTORS: *Petroleum, Synthetic waxes, Distillation, *Ethylenes, Production, *Hydrocarbons, Gas chromatography, Gasoline, Decomposition.

Production possibility of unsaturated hydrocarbons, particularly α-olefins, through high-speed cracking of paraffinic petroleum products was investigated. It was found, that the cracking gases contain 30-50% ethylene. The fraction 60-175 C, produced in cracking of solid, industrial paraffin, contains over 70% of α-olefins C_5-C_{10}. The experiments were carried out in countercurrent with prior heated, powdered coke. Gas-liquid chromatography and Raman-spectra were the main analytical methods. The gasoline of high-speed cracking of solid paraffin was composed mainly of α-olefins. (Author)

Legenchenko, I. A.
ON THE QUESTION OF BRINE EXTRACTION BY MEANS OF DIRECT-FLOW-COUNTERFLOW WELLS (BORES). [1963] 14p. (figs. tables omitted) 1 ref.
Order from OTS or SLA $1.60 63-16213

Trans. of [Khimicheskaya Promyshlennost'] (USSR) 1956 [no. 8] p. 469-474.

DESCRIPTORS: *Rock salt, Boreholes, Water, Fluid flow, Solvent action, Solids, *Mining engineering

Levitin, M. M. and Stetskaya, O. A.
APPARATUS FOR PRODUCTION OF LIQUID AIR ACCORDING TO METHOD OF P. L. KAPITSA, MEMBER OF SOVIET ACADEMY OF SCIENCES. [1963] 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-18125

Trans. of [Avtogennoe Delo (USSR) 1941, v. 12, no. 5] p. 25-26.

DESCRIPTORS: *Air, *Liquefied gases, *Industrial equipment, Design.

Majtl, H.
CONCERNING PRODUCTION OF POTASSIUM SULPHATE AND MIDDLE CALCIUM PHOSPHATE (O Vyrobe Siranu Draselneho a Stredniho Fosforecnanu Vapenateho). [1963] [12]p. (foreign text included).
Order from SLA $1.60 63-18143

Trans. of [Chemicke Listy] (Czecholsovakia) 1934, v. 27, p. 230-233.

DESCRIPTORS: *Potassium compounds, *Sulfates, *Calcium compounds, *Phosphates, Industrial production, *Chemical industry, Fertilizers, Foods, Drugs.

Manukovskaya, L. G., Solomin, A. V., Suvorov, B. V., and Rafikov, S. R.
CONTINUOUS METHOD FOR TEREPHTHALIC ACID PRODUCTION BY LIQUID-PHASE OXIDATION OF p-XYLENE. [1963] [6p] 18refs
Order from OTS or SLA $1.10 63-20213

Trans. of Neftekhimiya (USSR) 1962, v. 2, no. 4, p. 531-535.

DESCRIPTORS: *Xylenes, Oxidation, *Terephthalic acid, Chemical reactions, Synthesis (Chemistry).

Liquid phase oxidation of p-xylene by molecular oxygen, with and without n-butyric acid as solvent, was studied in the presence of cobalt bromide catalyst. It was found that the oxidation degree in the presence of $CoBr_2$ is greatly increased by addition of easy oxidable substances to the reaction mixture (e. g. n-butyraldehyde) and of fresh catalyst. Principal possibility of a continuous liquid-phase p-xylene oxidation to terephthalic acid was demonstrated under atm. pressure, in 97-99% yield with respect to raw-material, at an apparatus efficiency of 1.5 g acid per hour in small laboratory experiments. (Author)

Marpillero, Paul.
PROCESSES FOR THE PRODUCTION OF SEMI-CHEMICAL CELLULOSE FROM MATERIALS CONTAINING CELLULOSE. [1963] [30]p. refs.
Order from OTS or SLA $2.60 63-18770

Trans. of Italian patent 480.005, 18 Apr 53, by Azienda Brevetti Industriali (A. B. I.).

DESCRIPTORS: *Cellulose, Manufacturing methods, Plants (Botany), Trees, Chemicals, Cellulosic plastics, Lignin, Fibers (Natural), Reagents, *Cellulose chemistry.

Mogilevskii and others.
MODIFICATION OF THE PROPERTIES OF VISCOSE FIBERS. [16 Apr 63] 10p. 19 refs.
Order from OTS or SLA $1.10 63-18364

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 1, p. 37-39.

DESCRIPTORS: *Fibers (Synthetic), *Viscose, Rayon, Elasticity, *Protective treatments, *Amines, *Ethyl radicals, Chemical reactions, Solutions, Polymers, Mechanical properties.

Elastic properties of rayon can be improved by treatment with monoethylamine. Wearability can be increased by coating rayon with a film of synthetic polymers. (Author)

Obrydchikov, S. N., Smidovich, and Lebedev.
MATERIAL BALANCE IN CRACKING OF KEROSENE FRACTIONS. [1961] 3p.
Order from OTS or SLA $1.10 62-10896

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 249-253.
Also available from OTS or SLA $2.60 in 61-20402 [1961] 24p.

DESCRIPTORS: *Kerosene, Distillation, Pyrolysis, Gasoline, Gases, Organic solvents.

Okamura, Sakio and Shirato, Mompei.
LIQUID PRESSURE DISTRIBUTION WITHIN CAKES IN THE CONSTANT PRESSURE FILTRATION. [1963] 14p
Order from K-H $14.00 K-H-3626-b

Trans. of Kagaku Kogaku (Japan) 1955, v. 19, p. 104-110.

DESCRIPTORS: *Pressure, Distribution, *Liquids, Material forming

Raaben, V. M.
REMOVING NATURAL GASOLINE FROM THE GAS OF THE UKRAINIAN OIL FIELDS. [1962] 3p.
Order from OTS or SLA $1.10 62-14116

Abstract trans. of Neftyanoe [Khozyaistvo] (USSR) 1940, v. 21, no. 6(11) p. 76-81.
Also available from OTS or SLA $1.60 in 61-20784 [1961] 13p.

DESCRIPTORS: *Gasoline, *Natural gas, Adsorption, Separation, Carbon.

Experience gained in 20 year application of carbon adsorption of natural gasoline in Western Ukraine (formerly Poland) is summarized. After a brief review of the historical development of this industry, the present state of the adsorption plants is described. (Author)

Schon, G.
ELECTROSTATIC CHARGING PROCESSES AND THE SPARK DANGER FROM THEM. [1963] 18p
Order from K-H $18.00 K-H 12054

Trans. of Chemie-Ingenieur-Technik (West Germany) 1962, v. 34, no. 6, p. 432-436.

DESCRIPTORS: *Towers (Chemistry), *Static electricity, Electric discharges, *Sparks.

Shcherbakov, I. G. and Shcherbakov, A. A.
SPRAY DRYING OF MAGNESIUM CHLORIDE SOLUTIONS. [1963] [19p] 6refs
Order from OTS or SLA $1.60 63-18113

Trans. of Kalii (USSR) 1935, v. 4, no. 9, p. 16-22.

DESCRIPTORS: *Driers, *Magnesium compounds, *Chlorides, Solutions, Dehydration, Hydrolysis, Atomization.

Skata, Taro, Sakai, Tadashi, and Tsukamoto, Akio.
CONVERSION OF THE α-ISOMER OF 1, 2, 3, 4, 5, 6-HEXACHLOROCYCLOHEXANE TO THE γ-ISOMER. [1963] 5p
Order from OTS or SLA $1.10 63-18962

Trans. of Japanese patent application notification SHO 26-296, appl. no. SHO-11674, appl. 11 Nov 49, pub. notified 30 Jan 50, by Sankyo Co., Ltd.

DESCRIPTORS: *Hexachlorocyclohexanes, Molecular isomerism, Insecticides, Chlorine compounds, Sulfur compounds, Catalysts, *Gammexane.

This invention concerns the partial conversion of the α-isomer of 1, 2, 3, 4, 5, 6-hexachlorocyclohexane to the γ-isomer by treating the former with oxygenated compounds of chlorine or sulfur as a catalyzer. The purpose is to increase the insecticidal potency of the substance by converting the α- isomer, which has negligible insecticidal activity, to the γ-isomer, which is a more potent insecticide. (Author)

Smit, P.
DESUGARIZING MOLASSES WITH CATIONIC EXCHANGERS. [1963] 12p. (figs. omitted) 7 refs.
Order from SLA $1.60 63-16369

Trans. of Z[eitschrift für die] Zuckerind[ustrie] (West Germany) 1956, v. 6, p. 429-432.

DESCRIPTORS: *Saccharides, Decomposition, *Ion exchange, *Industrial plants, Economics

A process for the desugarizing of molasses by means of cationic exchangers is described and the results of a pilot plant discussed. The economical feasibility of the process is analyzed. (Author)

Ustavshchikov, B. F., Farberov, M. I., and Podgornova, V. A.
SYNTHESIS OF METHACRYLIC ACID ON THE BASIS OF ISOBUTYLENE. [1963] [10p] 12refs
Order from OTS or SLA $1.10 63-20216

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 4] p. 592-599.

DESCRIPTORS: *Butenes, *Acrylic acids, Methyl radicals, Synthesis (Chemistry), *Canavanine, Nitrogen compounds, Oxides, Catalysts, *Acrylic resins.

Reaction conditions of isobutylene with nitrogen tetroxide were found, producing α-oxyisobutyric acid in

~ 80% yield. Nitrozation and not nitration occurs under the conditions indicated and the intermediate α-nitrato-isobutyric acid is formed from the isonitrosocompound-α-nitratoisobutyric aldehyde. Catalyst and conditions were chosen for production of methacrylic acid in almost quantitative yield. (Author)

Wöhlbier, H. and Reisner, W.
PROBLEMS IN THE BUNKERING OF MEDIUM AND FINE-GRAIN LOOSE MATERIAL (Fragen der Bunkerung von Mittel- und Feinkörnigem Schüttgut). [1963] [19]p. (foreign text included) 16 refs.
Order from SLA $1.60 63-18434

Trans. of Chem[ie]-Ing[enieur]-Tech[nik] (West Germany) 1962, v. 34, p. 603-609.

DESCRIPTORS: Materials, *Storage, *Containers, *Particles, Motion, Friction, Pressure, Separation, Particle size, Moisture.

The investigations indicate connections between bunker form, outlet opening and the loose material's properties. In addition, pressure distribution, bridge formation and unmixing are discussed.

Civil Engineering

[RUSSIAN BUILDING CONSTRUCTION] tr. by E. C. B. P. 11 Apr 63 [64]p. (figs. omitted). I-2224 a-j.
Order from OTS or SLA $6.60 63-19415

Trans. of mono. Na Stroikakh Rossii, Moscow, 1962, p. 5-35.

DESCRIPTORS: *Construction material industry, *Industrial production, *Reinforced concrete, *Construction, Buildings, Housing, *Structural parts, Industrial plants, Economics.

Contents:
Our main effort: Specialization and cooperation, by E. Ragozin and V. Abramov
For a higher technical level, by A. Lyapin and K. Klimov
To satisfy the growing building requirements, by G. Nizovoi and P. Vasil'ev
In the interests of all economic rayons, by L. Ben'kovich and E. Lerner
The building industry production base is expanding, by V. Lavrent'ev and Yu. Sokolov
Capital investments are effectively used, by S. Zhuravlev and N. Il'yinykh
New capacities come into being, by V. Solov'ev and N. Gurov
At the points of concentrated constructions, by N. Yaropolov and S. Chaikin
We are creating inter-rayon bases for the building industry, by P. Filatov
Growth of productive labor: The result of concentration and specialization, by I. Lykov.

RUSSIAN BUILDING STANDARD SPECIFICATIONS, tr. by G. L. Cairns. Oct 60 [66]p. Library Communication 1004; [DSIR] NLL M. 3197.
Order from OTS or SLA $6.60 62-24616

Trans. of 4 standard specifications pub. by Gosudarstvennoe Izdatel'stvo Literaturi po Stroitel'stvu, Arkhitekture i Stroitel'nim Materialam, Moscow, 1959.

DESCRIPTORS: *Mortar, *Cements, Buildings, Specifications, Standards, Brick, Calcium compounds, Monoxides, Sand, Plasticizers, Wastes (Industrial) Soaps

Contents:
Regulations on mortars for brickwork (SN-43-59)
Regulations on the manufacture of local cements and their use in building (SN-57-59)
Building limes (GOST-9179-59)
Regulations on the use in mixed and lime mortars of the organic plasticizer-soapstock waste

Barkan, D. D.
DYNAMICS OF BASES AND FOUNDATIONS, tr. by L. Drashevska. 1962, 434p
Order from McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, 36, N. Y. $12.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: Dynamics, Soils, Engineering, *Foundations (Structures), *Soil mechanics.

Fortun, Egmont.
CORRECT METHODS OF LAYING PLASTIC FLOOR COVERINGS. [1963] 10p (figs. omitted)
Order from SLA $1.10 63-18522

Trans. from Kunststoffe (West Germany) 1960 [v. 50, no. 2].

DESCRIPTORS: *Floors, *Plastics, *Tiles, Foundation (Structures), Sheets, Civil engineering, Adhesives.

Fumet, P. and Masson, P.
HIGHWAY PROBLEM IN THE SAHARA (Les Problems Routiers au Sahara) tr. by Miller. [1959] 7p (figs. omitted) H-1446.
Order from OTS or SLA $1.10 59-14889

Trans. of Routes et [des] Aerodromes (France) 1957, no. 11, p. [339]-349 and 373ff.

DESCRIPTORS: *Roads, *Deserts, Construction, Trafficability, Transportation, Economics, Costs

Daum, J.
CONCRETE TECHNOLOGY AND MEASUREMENT OF SURFACE REGULARITY IN THE CONSTRUCTION OF CONCRETE ROADS, tr. by C. V. Amerongen. [1963] [10p] C&CA Library Trans. no. 105.
Order from Cement and Concrete Association, 52 Grosvenor Gardens, London, SW1 £1

Trans. of Strasse und Autobahn (West Germany) 1961, v. 12, no. 6, p. 197-202.

DESCRIPTORS: *Roads, *Concrete, Surfaces, Construction.

Henk, B.
WHITE CONCRETE KERBS AND MARGINAL STRIPS, tr. by C. V. Amerongen. [1963] [24p] 21 refs
C&CA Library Trans. no. 104.
Order from Cement and Concrete Association, 52 Grosvenor Gardens, London, SW1 £1

Trans. of Strassen- und Tiefbau (West Germany) 1960, v. 14, no. 9, p. 674, 676, 678, 680, 682, 684, 686, 688, 690, 692-693.

DESCRIPTORS: *Concrete, *Pavements, Wear resistance *Roads, Construction, Traffic, Safety.

Heusel, H.
THE SCHMARGENDORF FLYOVER IN BERLIN: A PRESTRESSED CONCRETE BRIDGE WITH SHELL-LIKE STRUCTURAL ACTION, tr. by C. V. Amerongen [1963] [23p] C&CA Library Trans. no. 103.
Order from Cement and Concrete Association, 52 Grosvenor Gardens, London, SW1 £1

Trans. of Beton und Stahlbetonbau (West Germany) 1960, v. 55, no. 9, p. 193-205.

DESCRIPTORS: Structural shells, *Bridges, *Concrete, Design, Construction.

Johannesson, Paul.
REAL FIRE AS A FULL SCALE FIRE TEST. [1962] 4p. (figs. omitted).
Order from SLA $1.10 62-18012

Trans. of Halmstad Jarnverks A.B. (Sweden). Technical Bulletin-12, 1961, 3p. (reprinted from Brandskydd (Sweden) n.d.).

DESCRIPTORS: *Fires, *Structures, *Beams, Concrete, Damage, Testing, Mechanical properties.

Paduart, A., Aas-Jakobsen, A. and others.
REPORT ON THE FIFTH WORKING SESSION, VIENNA, APR 59, PT. 2, [1963] [92]p.
Order from SLA $8.60 63-18505

Trans. from Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1960, no. 25.

DESCRIPTORS: *Concrete, *Beams (Structural) *Shear stresses, Load distribution, Failure (Mechanics) *Deformation, *Reinforcing materials, Structures, Mathematical analysis.

Summaries are given of studies conducted by members of the European Concrete Committee in the following areas: shear, buckling, t-beams, and technical notation.

Pieper, Klaus and Wenzel, Fritz.
DESIGN LOADS FOR BUILDINGS: PRESSURE RELATIONSHIPS IN SILO CELLS. Notes on the Draft Specification DIN 1055, pt. 6, Sep 62. June 63 [20]p. 16 refs.
Order from SLA $1.60 63-18318

Trans. of Beton und Stahlbetonbau (West Germany) 1963, v. 58, no. 1, p. 6-11.

DESCRIPTORS: *Buildings, Storage, Plants (Botany), *Loading (Mechanics), Load distribution, Pressure, Theory, Design.

Su, Ts'en-kuan.
BRIDGE GIRDER ASSEMBLY BY HIGH STRENGTH SCREW BOLT METHOD. 18 Apr 63, 11p. JPRS: 18788.
Order from OTS $0.50 63-21614

Trans. of Organisation für die Zusammenarbeit der Eisenbahnen. Zeitschrift (Poland) 1963, no. 1, p. 15-17.

DESCRIPTORS: *Civil engineering, *Bridges, Construction, *Bolts, Locking fastener devices, Welds, *Beams (Structural).

The construction of welded bridges using prefabricated assembly links by means of bolts of high strength results in 12.9% metal savings compared to riveted bridges of equal lengths. Welding techniques have presently been mastered by steel fabricating plants of the railroads of the People's Republic of China. Thus, riveted bridges can be replaced by welded ones. The use of screws in prefabricated links not only speeds the work but lessens the required manual effort and number of tools needed. These advantages appear obvious as actually applied to an experimental series of bridges. Productivity for tightening screws is on the average three times as high as riveting for the same bridge. Sandblast cleaning of sheet surfaces assures a coefficient of friction below 0.45. Initial stressing of the screws is assured by turning the nuts. This procedure is simple and safe. (Author)

Electrical and Electronic Engineering

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 6(279). 27 Sep 63, 133p. JPRS: 21245.
Order from OTS $2.75 63-31841

Trans. of Vestnik Svyazi (USSR) 1963 [v. 23] no. 6(279) including covers.

DESCRIPTORS: *Communication systems, Postal systems, Photoelectric effect, Microwave equipment, Telephone equipment, Telegraph systems, Monitors, Television communication systems, Budgets, Personnel management

Contents:
Speeding up delivery of printed matter and mail to the population, by V. N. Matsnev
Moral code of the builder of Communism become the law of life, by L. V. Gurkina

Transmission of central (Moscow) newspapers by photoelectric method, by R. A. Kudryavtsev
Modification of a short-wave transmitter, by E. E. Kuteinikov and G. D. Danilenko
Mechano-electronic unit for matching KRR-30/60 equipment with ATS (automatic telephone system) equipment, by V. G. Bosenko and others
A desk for the monitoring and measurement of voice-frequency telegraph channels (PKI) by S. I. Vygovskii and T. I. Rapoport
Central control room of Kiev television center, by K. A. Alekseev and V. A. Savanchuk
Application of chemical materials in communication engineering, by P. A. Frolov and K. K. Nikol'skii
On the change in the procedure of planning the operating activities and development of communication facilities, by V. M. Konyukhova
Work of communications organizations must be raised to the level of new goals
Experience in the use of direct connections at Rostov-on-Don telegraph office, by A. V. Ostroumov
Reorganization of postal service in ukrainian SSR, by A. K. Gridin
Efficient and reliable communication service for the newly created party and Soviet organizations, by M. F. Tarasov and M. Ya. Zinger
Regulations on technical servicing of radio-relay communication links, by I. P. Petrushin
Resources are put in operation, by L. Ya. Yakovlev
Work with supervisory and technical personnel must be improved, by M. V. Ryzhov
Correct standardization of labor is an important factor in the growth of its productivity, by N. T. Bychkov

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 7(280). 8 Oct 63, 143p JPRS: 21358.
Order from OTS $2.75 63-31898

Trans. of Vestnik Svyazi (USSR) 1963 [v. 23] no. 7(280) including covers.

DESCRIPTORS: *Communication systems, Personnel, Engineering, Management engineering, Economics, Labor

Contents:
An important political goal of communication workers (editorial)
Educational work at postal-service enterprises of Moscow, by G. N. Smirnov
Communist attitude toward work is the duty of every communication worker, by I. A. Shkoda
An account of the fourth plenum of the central committee of trade union of communication workers and of motor transport highways workers
Continuous method of monitoring and stability of quality indices of television transmitters, by A. P. Sorenzon and M. D. Ruvinskii
On stereophonic radio broadcasting, by L. M. Kononovich
Apparatus for the determination of the load on telegraph links, by A. G. Abugov and E. I. Tumanovskii
Protection from dangerous voltages of communication equipment employing semiconductor devices, by A. S Novoselov
Expansion of the operating frequency of the oscillator and indicator from the instrument set KIPZ-300, by I. E. Moiseev and S. D. Poplavskii
All attention to quality, by N. N. Alesenko and P. A. Dyukov
Pneumatic-system conduits made of polyethylene, by A. F. Abramov
Front-rank mail transport collective, by L. Ya. Yakovlev
Unitilized source of raising labor productivity, by N. A. Shteinman
Urgent problems of planning and management, by S. A. Vartan'yan
The entire collective is participating in the competition, by G. M. Filatov
Why Baldone communication workers are respected, by N. F. Gilev

SUDDEN PRESSURE RELAY. [1963] [6]p.
Order from SLA $1.10 63-16706

Trans. of an article from unidentified source, n.d.

DESCRIPTORS: *Pressure switches, *Transformers, Oils, Electric discharges, Safety devices.

The relay is used for the protection and the alarm of the oil-immersed transformer, in the case that the inner pressure rises suddenly for which reason an arc breaks out in the transformer oil.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 63. 29 July 63, 17p. JPRS: 20383.
Order from OTS $0.50 63-31399

Trans. of Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 4, p. 32-34, 54-56, 67, 74; Vestnik Elektropromyshlennosti (USSR) 1963 [v. 34] no. 6, p. 37-40.

DESCRIPTORS: *Industrial production, Electrical equipment, Electric motors, Automation, *Electric insulation, Ceramic coatings, Electric wire, Plastic coatings, Plastics, Pipes, *Phase transformers, Automatic, *Circuit breakers

Contents:
Automated production of electric motors in Armenia, by R. Karapetyan
Enamel conductor with increased heat stability, by G. Arzumanyan
Rotor machines for manufacture of wound products
New transformer
Automatic fast acting circuit breaker AB-2/4, by A. E. Glagovskii and V. E. Zharkikh

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 64. 1 Aug 63, 32p. JPRS: 20445.
Order from OTS $1.00 63-31429

Trans. of Novye Tovary (USSR) 1963, no. 4, p. 3 and 25 selected articles from 1963 illues of 16 Russian newspapers.

DESCRIPTORS: *Industrial production, *Electrical equipment, Management engineering, *Laboratory equipment, Commerce, Industrial equipment, Personnel management, Electric switches, *Aluminum, Welding, Boiler tubes, Centrifugal pumps, Coolant pumps, Power transformers, Diesel engines, *Generators, *Electric power production, *Steam turbines, Magnets, Communism, *Industrial training, *Small tools, Drills, *Electric discharges, *Explosions, Liquids, Explosive initiators, Granite, Kitchen equipment and supplies, *Centrifuges, Blowers, Dry disk rectifiers

Contents:

Problems of the electrical equipment industry in the Urals, by G. Iskhakov and V. Ermolaev
Insufficient buyers for laboratory equipment produced by Dmitrovskii electromechanical plant
Brief advertisements for equipment and personnel
Riga employment want ads
Equipment being shipped to Votkinskaya GES
Aluminum replaces copper in manufacture of high-voltage switches at Volta plant
A new tube welding machine manufactured by Elektrik plant
New centrifugal transformer pump designed by electric machine-building plant imeni Frunze
Automated diesel generators for rural stations and a new modeling machine
Large turbogenerators produced by Khar'kov Elektrotyazhmash plant
Large turbogenerators shipped out by Khar'kov Elektrotyazhmash plant
New permanent magnets for ore beneficiation developed by Erevan semiconductor and electroceramics plant
Preparation for the manufacture of a 500,000-kw turbogenerator at Elektrosila plant, by V. Snitkin
Study circle formed at Skopin electric motor and electric pump plant to examine problems of concrete economics, by V. Markin and D. Novikov
Production of large turbogenerators at Leningrad Elektrosila plant in 1963
Shortage of tools hinders production at Yaroslavl' electric machine-building plant, by M. Vorotintsev
New "electrohydraulic" method of blasting granite
New domestic laundry centrifuge developed by Batumi electrical equipment plant
Miscellaneous brief items

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 72. 27 Aug 63, 30p.
JPRS: 20818.
Order from OTS $1.00 63-31628

Trans. of Novye Tovary (USSR) 1963, no. 5, p. 8-9 and 25 selected articles from 1963 issues of 11 Russian newspapers.

DESCRIPTORS: *Industrial production, *Electrical equipment, Transformers, *Generators, Hydroelectric power systems, *Electric cables, Personnel management, Electric wire, Pumps, Water, Fans, *Ventilation fans, Industrial relations, Conferences, Lighting equipment, Pipes, *Polyethylene plastics, Vacuum cleaners, Armatures, *Electric switches, Kitchen equipment and supplies, *Resistance welding, Automatic.

Contents:

Transformers manufactured for agricultural uses at Leningrad Sel'elektro plant
320,000 kilowatt turbogenerator being manufactured by Elektrosila plant for Konakovskaya hydroelectric power station
Moskabel' plant manufactures power cable and wire in excess of the year's program
Leningrad Elektrosila plant to produce two hydrogenerators for the Bratskaya hydroelectric power station and a turbogenerator
Personnel needs at Riga electrical regulating devices plant
Electric wire production at the Gomel' cable plant for use in industry in the Baltic Region, the Ukraine, and other areas
ETsNV-6 artesian well water pumps to be produced at electromechanical plant in Osh
Centrifugal fans and ventilators produced at Baranovichi commercial equipment plant
Mechanization for increased production at Lobnya electrical equipment plant
Tiraspol' "Elektrodvigatel' " plant producing engines and generators utilizes series assembly for production of generators
Employment opportunities at Kishinev electrical machine building plant
Claims being accepted in connection with transfer of Moldavizolit plant electrical repair shop to Tiraspol' Elektrodvigatel' plant
Employment opportunities at Kishinev Elektromashina plant
Contract misunderstanding between Elektrik plant and Proletarii plant due to deception of Proletarii plant administration, by L. Erukhimovich
Operating methods of Khar'kov elektro-mechanical plant production conference, by P. Kotov
Decision to produce VE-1 electric table fans jointly at Leninakan domestic electrical equipment and electric micro motor plants
Production quality problems at Bel'tsi electric light fixtures plant and at Kishinev Elektromashina plant
Polyethylene pipes and vacuum cleaners manufactured in Lithuania
Khar'kov Elektromashina plant to fulfill orders promptly for large-scale chemical industry, by V. Yugov
New products and processes at Erevan electrical apparatus plant
New washing machine produced at Shtamp domestic washing machine plant of Priokskii sovnarkhoz, by B. Kosharovskii
Elektrostanok plant of Khar'kovskii sovnarkhoz produces window exhaust fans, by A. Freiman
Miscellaneous brief items.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 76. 18 Sep 63, 26p.
JPRS: 21135.
Order from OTS $0.75 63-31782

Trans. of Mashinostroitel' (USSR) 1963, no. 7, p. 25, 35; Novye Tovary (USSR) 1963, no. 7, p. 3-4; and 19 selected articles from 1963 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Electrical equipment, Personnel management, *Rolling mills, Commerce, *Computers, Control systems, *Circuit breakers, Industrial plants, Automation, *Kitchen equipment and supplies, *Transformers, Materials, Economics, Paper, Personnel, Furnaces, *Capacitors, *Generators, Lighting equipment, Test methods, Electric insulation, Electric motors.

Contents:

Announcement of competition for vacant scientific research positions
Construction of a large-scale blooming mill under way at the Chelyabinsk metallurgical plant
Vyborg electrical instrument plant products are going to Cuba, Egypt and other foreign countries
Applications of a control machine (UM-1NKh) developed by the mechanical institute
Kishinev Elektromashina plant "help wanted" advertisement
Production of a new type of oil circuit breaker started a at the Chimkent Elektroapparat plant
The latest equipment is being installed in the Armenian electric machine building plant
The Uralelektroapparat plant is producing large-scale single-design equipment
Washing machine production at the Kishinev Elektromashina plant, by L. Gol'denberg and I. Simis
Large transformers produced at Chirchik
Possible savings in the use of scarce materials, by Ya. V. Golovko
New large paper-making machine being installed at Segezha
Inspector cited at Ust'-Kamenogorsk condenser plant
Automation of enamelling furnaces at Moldavkabel'
The Ust'-Kamenogorsk condenser plant is producing power line condensers
Offers of employment in electrical engineering and repair work at Erevan
Hydroelectric units for the Votkinskaya GES have been manufactured
Miscellaneous advertisements concerning equipment
Production of New Year's tree lights discontinued at Fizpribor plant for lack of bulbs, by A. Karelin
The use of medical instruments in inspections of equipment, by V. Snytkin
Measures taken to utilize capacity of the Orgeev electrical installation items plant, by A. Korobchanu
DAZO-19 motor being produced by Erevan Armelektro plant.

USSR SCIENTIFIC ABSTRACTS: ELECTRONICS AND ENGINEERING NO. 4. 9 Oct 63, 30p JPRS: 21380.
Order from OTS $1.00 63-31904

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Waveguides, Electromagnetic waves, Resonators, Radio waves, Ionosphere, Scattering, Propagation, Diffraction, Turbines, *Communication systems, Control systems, Mechanical engineering, Power supplies, Cybernetics, Hall effect.

Contents:

I. Electronics
Electronic components
Communications systems
II. Engineering
Control devices
Mechanical engineering
Power engineering.

Amstutz, P.
TRANSFER FILTERS. [1963] 9p. (figs. omitted).
Order from SLA $1.10 63-18879

Trans. of Câbles et Transmission (France) 1962, v. 16, no. 3, p. 249-253.

DESCRIPTORS: *Filters (Electromagnetic wave), Band-pass filters, High-pass filters, Low-pass filters, Attenuation, Inductance, Capacitance, Design.

The article first defines through graphs the attenuation conditions imposed on group and pilot transfer filters and then explains the reasons for choice of methods adopted for calculation thereof; the general diagrams of these filters are thereupon furnished and some particular technological aspects are specified. (Author)

Bandman, O. L.
CONDITIONS FOR THE PHYSICAL PRACTICABILITY OF ADMITTANCE MATRICES OF RC NETWORKS (Priznaki Fizicheskoi Osushchestvimosti Matrits Provodimosti Yas-Tsepei). [1963] [34p] (foreign text included) 7refs
Order from OTS or SLA $3.60 63-18702

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 8, p. 27-39

DESCRIPTORS: *Electrical networks, Synthesis, *Matrix algebra, *Transformations (Mathematics), *Admittance, Circuits, Electrical impedance.

Topics include: coordinate transformation matrix; coupling (cut-set) matrices; necessary conditions for the physical realizability of admittance matrices; sufficient conditions for the physical practicability of admittance matrices; conditions of physical realizability of admittance matrices in a canonical coordinate system; and, conditions for feasibility of an admittance matrix in a sequential coordinate system.

Ebisch, M.
COAXIAL STANDING WAVE DETECTORS INSERTS OF HIGH PRECISION FOR THE FREQUENCY RANGE 1 THROUGH 13 Gc. [1963] 12p. 1 ref.
Order from SLA $1.60 63-18167

Trans. of Frequenz (West Germany) 1959, v. 13, no. 2, p. 52-56.

DESCRIPTORS: *Standing-wave indicators, *Measuring devices (Electrical and electronic), Coaxial cables, High frequency.

In microwave technology apparent resistance as far as amplitude and phase is concerned they are usually measured by standing wave detectors. For such purposes two interchangeable coaxial standing wave detectors with characteristic impedances of 50 and 60 Ω were created. Their properties and application potentials are described along with those of low-reflection insulator supports and the corresponding connectors. (Author)

Eilenkrig, A. M. and Frolushkin, V. G.
DEVICE FOR SEPARATING NARROW FREQUENCY BANDS FROM A COMPLEX SIGNAL. 1 Jul 63 [5p] FTD-TT-63-458.
Order from OTS or SLA $1.10 63-24022

Unedited rough draft trans. of Russian patent 151699, appl. no. 576830/26, 28 Mar 52.

DESCRIPTORS: *Filters (Electromagnetic wave), *Narrowband, *Frequency, *Signals, Amplifiers, Design.

Known are devices for the separation of narrow frequency bands from a complex signal, made in form of several filtering cells, tuned to the separated frequencies. The device described differs from the known ones by the use of band elimination filters and distribution elements, forming a narrow band amplifier. This amplifier assures zero phase displacement on a tuning frequency of the band elimination filter. At any other frequency phase displacement does not exceed $\pm 90^{o}$. (Author)

Ennulat, R.
THE PRACTICAL LIMITS OF ELECTRICAL MEASURING TECHNIQUE DETERMINED BY THE METALLIC MATERIALS, PT. I. FUNDAMENTALS OF MEASURING TECHNIQUE. PT. II. INFLUENCE OF THE METALLIC MATERIALS ON THE UNCERTAINITY OF MEASUREMENT, tr. by F. Liebesny. Nov 57 [40]p. (15 figs. omitted) 16 refs. M 1750.
Order from OTS or SLA $3.60 60-19907

Trans. of Metall (West Germany) 1955, v. 9, no. 9/10, p. 382-386 and no. 17/18, p. 758-763.

DESCRIPTORS: *Measuring devices (Electrical and Electronic), *Tolerances (Mechanics), Materials, Metals, Potentiometers, Coils, Thermionic converters, Galvanometers, Alternating current, Direct current, Calibration, Construction, Design

The theory of measuring instruments allows what is ultimately physically attainable to be stated, and that substantially only the properties of materials - in particular those of the metals - determine both what is technically possible and what is economic in practice. In order to be able to work this out clearly, the most important relationships of the simple elementary measuring devices for direct current (potentiometer, moving coil instrument) and for technical alternating current (potentiometer in connection with a thermal converter iron-less electrodynamic instrument, moving iron instrument) are derived in Part I, between the limits of accuracy on the one hand and the properties of the metallic materials on the other hand. The groups of materials regarded as most important from this point of view (standard resistance materials, materials for strip or pivot mounting, springs and permanent magnets) are dealt with in more detail in Part II. (Author)

Golev, Konstantin Vladimirovich.
RADAR RANGE CALCULATION. 19 Sep 63, 317p. 102 refs. JPRS: 21139.
Order from OTS $5.00 63-31786

Trans. of mono. Raschet Dal'nosti Deistviya Radiolokatsionnykh Stantsii, Moscow, 1962, 204p.

DESCRIPTORS: *Radar equipment, *Radar signals, *Ranges (Distance), *Range finding, Radar stations, *Attenuation, Radar targets, Detection, Probability, Microwaves, Propagation, Equations, Graphic analysis.

This book developes the theory and methods of graphic solution of the equation of the maximum range of radar stations for point targets and targets of other types in the presence of external interference and when there is no external interference. Both foreign and domestic literature was used in writing the book. The material includes examples which are illustrative and hypothetical. General formulas and universal graphs are included for calculating range under the influence of a spherical smooth and rough earth surface. The probability of detecting various types of signals is also considered. (Preface)

Rassulov, A. M.
THE RATIONAL DESIGN OF THE COOLING DUCTS OF A ROTOR (O Ratsional'nom Ispolnenii Ventilyatsionnykh Kanalov Rotora). Mar 62 [10]p. 2 refs. RTS 2049.
Order from OTS or SLA $1.10 62-24305

Trans. of Vestnik Elektropromyshlennosti (USSR) 1961, v. 32, no. 8, p. 31-34.

DESCRIPTORS: *Ventilation ducts, Design, Turbine stators, Cooling, Electric machinery.

Consideration is given to the effect of helical cooling ducts on the main characteristics of the direct cooling of the rotor winding.

Schurig, E.
"UZ 71" A NEW UNIVERSAL METER. [1963] 7p. (figs. omitted).
Order from SLA $1.10 63-18713

Trans. of Elektronische Rundschau (West Germany) 1962 [v. 16] no. 3, p. 111-114.

DESCRIPTORS: *Digital computers, *Measuring devices (Electrical and electronic), Transistors.

The universal meter "UZ 71" is a fully transistorized digital measuring instrument with single readings. In addition to many measuring- and counting operations, the universal meter can be used in frequency-, frequency ratio-, cycle- and time measurements. The measured counting results are stored and indicated. Binary coded recording voltages are also stored and indicated. The instrument is particularly suitable for universal use in digital measurements in the laboratory and in the industry. Technical data are given.

Seidel, Horst.
A MICROWAVE BRIDGE WITH HETERODYNE RECEPTION FOR ELECTRON SPIN RESONANCE MEASUREMENTS IN THE X-BAND. [1963] [6]p. 3 refs.
Order from SLA $1.10 63-18929

Trans. of Z[eitschrift] f[ür] Angew[andte] Physik (West Germany) 1962, v. 14, no. 1, p. 21-22.

DESCRIPTORS: *Microwave bridges, *Measuring devices (Electrical and electronic), *Electron spin resonance, Microwaves, Klystrons, Frequency modulation, Design, Measurement, X-band.

A description is given of a microwave system for recording ESR signals; a limit of detection of $N_{min} = 3 \times 10^{7} \Delta H/G$ spins is attained with relatively little expense. A heterodyne system with only one klystron is used, the heterodyne frequency being produced by modulation. Modulation of the carrier and frequency stabilization are linked. (Author)

Voitsekhovich, B. V., Girshman, G. Kh., and Dmitriev, L. N.
MECHANISATION AND AUTOMATION OF WIRING AND ASSEMBLY WORK. [1962] [7]p. [DSIR] NLL M. 4824.
Order from OTS or SLA $1.10 62-24868

Trans. of Leningradskaya Promyshlennost' [sic] (USSR) 1961, no. 3(27) p. 12-15.

DESCRIPTORS: *Printed circuits, Electrical industry, Industrial production, Automation.

Vorozhtsov, B. I., Nesterov, V. M., Zamotrinskaya, E. A., and Filatov, I. S.
DIELECTRIC PROPERTIES OF INSULATING MATERIALS IN GAMMA-IRRADIATION (Dielektricheskie Svoistva Izolyatsionnykh Materialov pri Gamma-Obluchenii) tr. by A. Pingell. 6 Jun 63, 15p 9refs N R L Trans. no. 940.
Order from OTS $0.50 63-11708

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1962, no. 4, p. 163-170.

DESCRIPTORS: *Insulating materials, Dielectric properties, *Gamma rays, *Electric insulation

An investigation was carried out of a large number of insulating materials, which were exposed to gamma quanta. A study was made of the materials, which differed in their structure and properties: polar and nonpolar, organic and inorganic, crystalline and amorphous, etc. Among them were polyethylene, polytetrafluoroethylene, rubber compound ED-6, plastics AG-4, quartz, mica, ceramics, silicon-organic lacquers, etc. All these materials have a widespread use in electrical and radio engineering. Measurements were made of the electrical conductivity, dielectric permeability, dielectric losses and electrical stability. A description of the methods used in measuring the characteristics of dielectrics in the irradiation process is given. (Author)

Westerveld, F.
NEW RAPID SELECTOR. [1962] 6p. (figs. [refs.] omitted).
Order from SLA $1.10 63-10045

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1953, v. 6, no. 4, p. 165-168.

DESCRIPTORS: *Channel selectors, *Switching circuits, *Rotary switches, Automatic, Couplings, Construction, Operation.

Mechanical Engineering

USSR INDUSTRIAL DEVELOPMENT: SOVIET POWER MACHINERY NO. 20. 1 Oct 63, 25p JPRS: 21268.
Order from OTS $0.75 63-31854

Trans. of Energomashinostroenie (USSR) 1963 [v. 9] no. 6, p. 26; no. 7, p. 12-13, 28; Sakharnaya Promyshlennost' (USSR) 1963 [v. 37] no. 6, p. 39; and 26 selected articles from 1963 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Power equipment, *Machines, *Steam turbines, *Gas turbines, Natural gas, Fuels, Pipelines, *Pumps, Irrigation systems, *Feed pumps, Boilers, *Diesel engines, *Generators, Economics, *Computers.

Contents:
200 -megawatt steam-gas installation, by M. I. Korneev and V. P. Drobot
Developments in the power machinery industry
Natural gas fuel for the Chimkent automatic press plant
Activity of the Sysert' hydraulic machinery plant
New pumping and dosing apparatus
New, larger boilers for power stations
The new GT-6-750 gas-turbine installation, by B. S. Revzik
The DGA50-9 and DGA25-9 automated diesel generators, by G. A. Vakulenko
Design and construction problems in the diesel industry, by K. Grigor'eva
Poor use of equipment in turbine and boiler plants
Computer assistance at the Khar'kov turbine plant
First turbine for the new hydroelectric station at Vilyuysk
News briefs; Khar'kov and Kaluga turbine plants
Developments in the power machinery industry.

Arseev, A. V. and Arseeva, N. V.
SMALL HEAD (ATTACHMENT) FOR THE COMBUSTION OF A HIGH-CALORIE GAS (Golovka dlya Szhiganiya Vysokokaloriinogo Gaza). [1963] [5p] (foreign text included)
Order from OTS or SLA $1.10 63-18613

Trans. of Russian patent 126, 507, cl. 18b, gr. 14, subgr. 05, 1960, appl. filed 13 Jan 59 under no. 616, 631/22 (pub. in Byulleten' Izobretenii (USSR) 1960, no. 5).

DESCRIPTORS: *Nozzles, Furnaces, Combustion, Gases, Gas flow, Fuels, *Jet mixing flow.

The object of the invention is a small head (attachment) for the burning of high-calorie gas in the shape of a luminous, flare-like flame in steel-melting- and other high-temperature furnaces. For the purpose of inducing the thermal decomposition of part of the gas under formation of carbon soot, a group of nozzles is applied for the supply ot the gas, which are arranged around one nozzle in the center like this that the individual gas jets from the outside nozzles become mixed into one large, common gas jet. For the purpose of supplying the possibility to regulate the location of the luminous flame in the furnace and its length, the axes of the peripheral nozzles can be shifted so as to bring about a motion in the radial direction. (Author)

Meister, R[udolph].
FLOW MEASUREMENT WITH A SIMPLE INOCULATING METHOD. [1962] 10p. 5 refs.
Order from SLA $1.10 62-10934

Trans. of Hüttentechnische Vereinigung der Deutschen Glasindustrie E. V., Frankfurt a. M. Mitteilungen (West Germany) 1957, p. 2107-2110.

DESCRIPTORS: *Flowmeters, Furnaces, Gas flow, Measurement, Carbon compounds, Dioxides, Additives, Gas analysis.

Morin, H.
AUTOMATIC WORKING OF THE LOADING OF A PRODUCER GAS GAZOGEN AT THE GAS WORKS OF VILLINEUVE-LA-GARENNE. [1963] 9p. (figs. omitted)
Order from SLA $1.10 63-16237

Trans. of a French language article from an unidentified source, n.d.

DESCRIPTORS: *Furnaces, Automation, Coke, Coal gas, Safety devices, Safety values.

Ordnance, Missiles, and Satellite Vehicles

ARTIFICIAL EARTH SATELLITES: 1962, VOL. 13, [SELECTED ARTICLES] tr. by Robert Hill and others. Apr 63 [173]p. 70 refs. ACIC TC-590.
Order from OTS or SLA $12.50 63-19536

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1962, v. 13, p. 1-66, 85-122.
##Another translation of p. 3-22 is available from OTS or SLA $3.60 as 63-14894; from STS p. 85-88 $6.25 as STS Trans-S6226 and p. 107-109 $4.60 as STS Trans-T6227.
###Also available from OTS or SLA as 63-19246 $4.60.

DESCRIPTORS: *Satellites (Artificial), Orbital trajectories, *Celestial mechanics, Space probes, Electron density, Sky brightness, Night sky, Exobiology, Equations of motion, Space navigation, Cosmic rays, Solar radiation, Sounding rockets, Gravity.

Contents:
##Determination of an orbit by two positions, by P. E. El'yasberg
###Analysis of the integrals of motion equations for artificial satellite in the normal gravitational field of the earth, by M. D. Kislik
The orbit of earth's equatorial satellite, by V. V. Beletskii
The effect of the earth's orbital motions on the measurements of distance and velocity in interplanetary space by radio methods, by V. M. Yakhnin
##Abatement of solar activity influencing the intensity of cosmic rays, according to the measurements on geophysical rockets in 1958 and 1960, by Yu. G. Shafer
Analysis of the results from the simultaneous measurements of electron concentration in ionsphere with the help of ionospheric stations and rockets, by K. I. Gringanz and G. I. Gdalevich
Investigating the brightness of the sky and the diffusion coefficient of the upper atmosphere, by A. E. Mikirov
##The direct measurements of night sky luminosity in spectral region λ = 8640 A, by T. M. Tarasova
Gravitational division, composition and structural parameters of night atmosphere at altitudes of 100-210 kilometers, by A. A. Pokhunkov
The interchange of chromatin materials in males of genus drosophila melanogaster affected by the factors of the flight in outer space, by E. A. Abeleva and others.

Aksenov, E. P., Grebenikov, E. A., and Demin, V. G.
THE GENERALIZED PROBLEM ON TWO FIXED CENTERS AND ITS APPLICATION IN THE THEORY OF MOTION OF ARTIFICIAL EARTH SATELLITES. [1963] [14p] 14refs
Order from OTS or SLA $1.60 63-18710

Trans. of #Astronomicheskii Zhurnal (USSR) 1963, v. 40, no. 2, p. 363-372.
Another trans. is available from OTS $0.50 as 63-21832, JPRS-19225, 16 May 63, 15p.

DESCRIPTORS: *Satellites (Artificial), *Motion, Theory, Gravity, *Equations of motion, Polynomials, Differential equations, Celestial mechanics, Complex numbers, Real variables, Series.

Lidov, M. L.
THE EVOLUTION OF THE ORBITS OF ARTIFICIAL SATELLITES OF PLANETS UNDER THE ACTION OF GRAVITATIONAL DISTURBANCES OF EXTERNAL BODIES. [1963] [61p] 10refs
Order from OTS or SLA $6.60 63-18706

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1961, v. 8, p. 5-45.

DESCRIPTORS: *Satellites (Artificial), *Orbital trajectories, *Equations of motion, *Gravity, Earth, Sun, Moon, *Celestial mechanics, Numerical analysis, Differential equations, Integration.

Sanitation and Safety Engineering

Petrov, B. D.
SANITARY EDUCATION AT A NEW STAGE. 10 Oct 63, 7p JPRS: 21409.
Order from OTS $0.50 63-31917

Trans. of Sovetskoe Zdravookhranenie (USSR) 1963, v. 22, no. 7, p. 3-8.

DESCRIPTORS: *Public health, *Propaganda, Education, Medicine.

A critical review of Soviet sanitary propaganda.

Yavorovskaya, S. F., Zhitkova, A. S. and others
USE OF FERRIC CHLORIDE SOLUTIONS TO DETOXIFY AND REMOVE MERCURY [AND] A METHOD OF REMOVING ORGANIC MERCURY COMPOUNDS FROM CLOTHING. 26 July 63, 10p. JPRS: 20348.
Order from OTS $0.50 63-31380

Trans. of Gigiena i Sanitariya (USSR) 1949 [v. 14] no. 3, p. 19-22 and 1952 [v. 17] no. 10, p. 31-33.

DESCRIPTORS: Separation, Mercury, Chlorides, Iron compounds, Organic compounds, *Clothing, *Decontamination, Cleaning, *Steam cleaning, Industrial medicine, Toxicity, *Mercury compounds, *Metalorganic compounds.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

PROCESS FOR REMOVAL OF STRAIGHT CHAIN HYDROCARBONS STARTING WITH PETROLEUM FRACTIONS. [1963] [19p]
Order from OTS or SLA $1.60 63-18889

Trans. of Belgian patent 623450 (prior appl. for pat. in France 10 Oct 61, no. P.V. 875,570) by [Société Française des Pétroles B.P.] descriptive memoir for pat. in the name of The British Petroleum Co., Ltd.

DESCRIPTORS: *Yeasts, Waxes, *Petroleum, Hydrocarbons, Industrial production, Food.

Bartusch, W., Heiss, R., and Gorling, P.
EXPERIMENTS WITH THE FLOW OF BLOWN COVERING LAYERS. I. EFFECT OF AN AIR CURRENT PASSING PARALLEL TO HORIZONTAL COVERING-LAYERS. [1963] 21p. 9 refs.
Order from SLA $2.60 63-18098

Trans. of Fette Seifen Anstrichmittel (West Germany) 1962, v. 64, no. 12, p. 1109-1114.

DESCRIPTORS: Food, *Coatings, *Cocoa, Surfaces, Mechanical properties, Blowers.

Champagnat, Alfred and Filesa, Jean.
PROCEDURE FOR THE PRODUCTION OF YEASTS FROM PETROLEUM FRACTIONS. [1963] 10p
Order from OTS or SLA $1.10 63-18855

Trans. of French patent 1,297,619, P.V. 870,968, internat. cl. C 12 c, Co., by Société Française des Pétroles BP, requested 17 Aug 61, granted 21 May 62 (Official Bulletin of Industrial Property 26 Nov 62) (3 requests deposited in Great Britain under British Petroleum Co., Ltd: first 22 Aug 60 with no. 28.959/1960, second and third 22 Aug 60 and 16 Aug 61, no. 28,961/1960.

DESCRIPTORS: *Yeasts, Petroleum, Food, Carbohydrates, Industrial production.

The invention has as its object an industrial procedure for the production of edible yeasts from petroleum fractions which have not been subjected to any particular refining.

Delvaux, Paul.
SUGAR SILOS (Silos a Sucre). [1963] [15]p. (figs. omitted) 18 refs.
Order from SLA $1.60 63-16351

Trans. of la Sucrerie Belge, 1956/1957, v. 76, p. 225-251.

DESCRIPTORS: *Carbohydrates, Stability, Moisture, Vapor pressure, Solutions, Crystallization, Temperature, *Storage, *Containers, Design, Construction

A resume is given concerning theoretical information and laws of experimentation which are the base of the principles governing maintenance of stability of sugar. Consideration is given to the different accomplishments in the field of sugar silos. The study treats both crystallized and raw sugar. (Author)

Drachenfels, Heinrich-Jürgen von, Kleinert, Jürg, and Hanssen, Ernstgeorg.
NEW KNOWLEDGE IN THE FIELD OF FAT BLOOM PREVENTION. [1963] 2p (figs omitted).
Order from SLA $1.10 63-20122

Trans. of [die] Naturwissenschaften (West Germany) 1962, v. 49, no. 15, p. 350-351.

DESCRIPTORS: *Cocoa, *Fats, *Crystal structure, Thin films, Crystals, Inhibition, Crystallization.

For the microscopic observation of fat crystal structure of chocolate, thin layers of 10μ thickness were prepared with the microtome. The thin chocolate layer is put on the slide and covered with a drop of 98% formic acid. The formic acid dissolves the sugar crystals so that in the later observation in polarized light only the crystalline fat phase lights up brightly on dark background. On the basis of this technique it was determined that the chocolate prepared according to the classic tempering and cooling process even with careful tempering shows a coarse crystal structure. After 40-days storage between 20° and 24°C the coarse crystals formed on the basis of their small inner surface in contrast with the oil phase are grown to large crystal agglomerates and are visible as fat bloom on the surface of the chocolate. A growth of the crystal, which is connected with the fat bloom formation, can be prevented during longer storage times, if chocolate is cast or molded with low temperatures (20-24°C). The crystal structure of a chocolate cast or molded at such low temperatures is extremely fine. Even after a 40-day storage a growth of the crystal and a fat bloom formation on the surface does not occur. (Extracted)

Dubourg, J., Saunier, R., and Fontaine, V.
THE DETERMINATION OF LIME SALTS IN SUGAR MANUFACTURE BY THE "HARDNESS" METHOD. [1963] 5p.
Order from SLA $1.10 63-16355

Trans. of Sucrerie Française, 1950, v. 91, p. 218-220.

DESCRIPTORS: *Carbohydrates, *Calcium compounds, Salts, Hardness, Industrial production, Chemical analysis.

Olenev, Yu. A. and Livshits, S. A.
DRYING MEAT BY THE SUBLIMATION PROCESS (Sushka Myasa Metodom Sublimatsii) tr. by B. Ribush. [1963] [14p] (foreign text included) 5refs [CSIRO] Trans. no. 6231.
Order from OTS or SLA $1.60 63-23987

Trans. of Kholodil'naya Tekhnika (USSR) 1962 [v. 39] no. 4, p. 22-27.
Another trans. is available from OTS $0.50 as 63-11576, 11 Feb 63, 7p.

DESCRIPTORS: *Meat, *Beef, Sublimation, Freezing, *Dehydrated foods, Aging, Processing, *Preservation.

For abstract see Technical Translations 9: 1026, 1963

Schlor-Werth, R.
PROCESS FOR THE PRESERVATION, WITH OR WITHOUT CARBONATION, OF MILK BASE AND SIMILAR BEVERAGES INTENDED FOR BOTTLING IN CONTAINERS FOR DELIVERY. [1963] 3p.
Order from OTS or SLA $1.10 63-18626

Trans. of French patent 904, 201, appl. 11 June 44, pub. 30 Oct 45.

DESCRIPTORS: *Food, Preservation, *Milk, *Beverages, Containers

A process for preservation, with or without carbonation, of milk base and similar beverages (such as fruit juice, fruit juice beverages, beer, vinegar, etc.) is described The liquid to be sterilized is heated before mixing at 70-80°C, then at 140-5°C, by circulating through coils and finally chilled to 4° after which products to be added are blended in. In the case of milk containing beverages, the cooled milk is treated under CO_2 pressure with continuous agitation with a mixture of fruit juice and sugar, preferably in equal proportions, and preferably heated, then cooled to 4°C, the entire batch is then subjected to about 1 atm. CO_2 for about 12 hours at this temperature and is then bottled in sterile containers under sterile conditions. (Author)

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

USSR INDUSTRIAL DEVELOPMENT: GENERAL INFORMATION ON SOVIET MACHINERY INDUSTRIES NO. 1. 9 Oct 63, 30p JPRS: 21382.
Order from OTS $1.00 63-31906

Trans. of Tekstil'naya Promyshlennost' (USSR) 1963 [v. 23] no. 7, p. 5-15; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 6, p. 15; from Pravda, Leningrad (USSR) 1963, 24 Aug, p. 2; Ekonomicheskaya Gazeta (USSR) 1963, no. 35[108] p. 47; Pravda Ukrainy (USSR) 1963, 21 Aug, p. 4.

DESCRIPTORS: *Industrial production, *Machines, Textile industry, Finishes and finishing, Industrial production, Automation, Machine tools, Industrial equipment, Construction, Newspappers.

Contents:
Growing textile industry requires high-efficiency looms, by A. Kh. Kim
New machinery for the finishing industry, by G. G. Zelenskaya and S. L. Sibirtsev
Technical progress in textile industry, by M. Saakyan
Full loading of equipment, by A. Solov'ev
Sheep dogs on a construction site, by V. Kapustin
Advertisements.
Shock worker praised
Orders for nails wanted
Orders wanted for Riga textile equipment
Barskii candy production
Personnel want ads
Plans for new Leningrad plant developed
Key personnel.

USSR INDUSTRIAL DEVELOPMENTS: GENERAL INFORMATION ON SOVIET MACHINERY INDUSTRIES NO. 2. 11 Oct 63, 32p JPRS: 21419.
Order from OTS $1.00 63-31924

Trans. of Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 6, p. 15 and 29 selected articles from 1963 issues of 15 Russian newspapers.

DESCRIPTORS: *Industrial production, *Machines, *Machine tools, Machine, *Tool industry, Industrial plants, Illumination, Vehicles, Management engineering, *Personnel management, Lithography, Petroleum industry, Polymers, Plastics, Maintenance, Foundries, Personnel, Textiles, Food.

Contents:
The need for natural light in industrial buildings, by V. Retivoi
Delays at the Ayaguz motor vehicle plant, by S. Shebalin
How and to whom premiums should be awarded, by L. Sonin
Weaving loom production at Dushanbe plant
Improved working conditions needed at Tulinovka plant, by Viktor Zabavnikov
Equipment orders should be placed ahead of time, by I. Gudim
New Kirgiz enterprise
Improving the production of non-standard equipment
Unified machines needed in polygraphic industry
Oil equipment from Azerbaidzhan to Yugoslavia
Polymers in machine building, by V. Vadachkoriya
Repair operations at Frunze plant, by V. Litovchenko
Foundry bases for the machine building industry
Polymers for use in everyday life, by V. Belyi
Ukase of the presidium of the supreme Soviets of the Estonian SSR
Loom shuttle replaced by needle
National University at the Tsentrolit plant

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 69. 4 Sep 63, 16p. JPRS: 20916.
Order from OTS $0.50 63-31673

Trans. of Sotsialisticheskii Trud (USSR) 1963 [v. 8] no. 7, p. 79-84 and #Stanki i Instrument (USSR) 1963 [v. 34] no. 7, p. 42-44.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, Milling machines, Automation, Management engineering, Computers, Control systems, Programming (Computers).

Contents:
Universal milling machines, by M. I. Lesnitskii
First steps towards model production management, by M. Korobov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METAL-WORKING EQUIPMENT NO. 73. 8 Oct 63, 27p
JPRS: 21354.
Order from OTS $0.75 63-31896

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1963 [v. 5] no. 7, p. 24; and from Ekonomicheskaya Gazeta (USSR) 1963, no. 35[108]; Pravda, Leningrad (USSR) 1963, 21 Aug, p. 1; 22 Aug, p. 2; and 27 brief selected articles from 1963 issues of various Russian periodical and newspapers.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, Hydraulic systems, Abrasives, Grinding wheels, Economics, Industrial plants.

Contents:
Results of the activity of the NTO at Elets machine-tool hydraulic equipment plant, by V. Cheusov
USSR abrasives production
Poor quality of abrasive machines, by V. Petukhov
Novosibirsk tool plant
News on machine-tool building in USSR (16 short articles)
News briefs (14 short articles).

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 88. 15 July 63, 30p.
JPRS: 20163.
Order from OTS $1.00 63-31278

Trans. of 22 selected articles from Jan, Apr 63 issues of 13 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, *Rectifiers, Semiconductor devices, *Radio receivers, Industrial plants, Automation, Commerce, *Meters, Lighting equipment, Radioactive isotopes, *Television receivers, *Electric motors, Synthetic stones, Clocks, *Spectrum analyzers, Batteries and components, Electronic scanners, *Electronic equipment, Ultrahigh frequency, Therapy, *Densimeters, *Plastics, Automatic, Control systems.

Contents:
A new semiconductor rectifier
Brief news items
A new pocket radio receiver
Increased output of the precision equipment industry
Trizpribor precision measuring device plant honored for high output
Production and export of flaw detectors
Problem of acute shortage of electric bulbs
An office for ditribution of radioactive isotope instruments, by V. Kostitsin
A new television set with revolving screen, by A. Abdullin
Production of electric motors at Vil'nyus El'fa plant
Synthetic diamonds tested in watch manufacture
Series production of control instruments to start ahead of schedule
Series production of new ratiometers started
A new beta spectroscope
Production of pocket batteries
TV receiver sets waste electricity
A device for converting graphical data into numerical values
A portable ultra-high frequency therapeutic instrument
A remote recording hydrometer
A new automatic resistance control instrument, by A. Savchenko
Use of plastics in watch-making
The manufacture of actuating mechanisms for automatic control systems, by T. Garyan.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 104. 6 Aug 63, 41p.
JPRS: 20510.
Order from OTS $1.25 63-31463

Trans. of 30 selected articles from 1962-63 issues of 5 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, Clocks, Maintenance equipment, *Oscillators, Plastics, *Loudspeakers, Maintenance, Television receivers, *Electric motors, *Generators, Electrical equipment, Spectrum analyzers, *Radiation measurement systems, *Gas filters, Optical equipment, *Radio receivers, Optical instruments, *Magnetic recording systems, Management engineering, Transformers, Industrial equipment, *Circuit breakers, Control systems, Electron tubes, Radioactive isotopes.

Contents:
Watch repair shops lack modern equipment, by L. Stepanov
Seismic low-frequency oscillator
Kiev "Tochelektropribor" plant changes product names and raises prices
Plastic molding and "GMS" tensile test machines sold by the Podol'sk storage battery plant
Mass production of "Venta" loudspeakers
Spare parts for obsolete types of radio and television receivers must be manufactured, by I. Adaskin and D. Orlov
New electric generators and motors sold by heavy scale-building plant imeni P. Starostin
The "Kievelektropribor snabsbyt" sells equipment
The Sumi electron microscope and electronic-automatic apparatus plant makes mass spectrometers and ion counters to order
The Odessa experimental medical apparatus plant makes filters
An optical-machine firm organized in Leningrad
Continuous production line at the "Vibrator" plant
"Kazakhstan" radio receiver made in Alma-Ata
The "Kinap" plant needs engineers
The "Gosmetr" instrument building plant needs engineers and workers
Leningrad optical-machine plant sells optical devices
The "Vibrator" plant wastes taxometers, by Yu. Zakharov
Faulty "MAG-59" sound recorder made by Gor'kovskii sovnarkhoz, by B. Trilesskii
"MKU-48" relays wasted at "Nefteprobor" plant, by N. A. Afanas'ev
Some work abuses at the "Mosmuzradio" plant
The "Elektropromremont" plant holds up repair of transformers
Sredne-Ural'skii sovnarkhoz scale plant sells machinery
The Khar'kov air conditioning plant needs synchronous generator
Electric apparatus plant sells high-voltage circuit breakers

The electric apparatus plant sells pumping control plants
The Orlov watch plant sells vent latches
Miscellaneous brief items.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 117. 22 Aug 63, 30p.
JPRS: 20777.
Order from OTS $1.00 63-31606

Trans. of Kinomekhanik (USSR) 1963, no. 5, p. 28; Mashinostroitel' (USSR) 1963, no. 5, p. 22; #Zavodskaya Laboratoriya (USSR) 1963 [v. 29] no. 6, p. 643-644; and 10 selected articles from 1963 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, *Semiconductor devices, *Rectifiers, Count-rate meters, Infrared radiation, Thermistors, High-speed photography, *Flash lamps, Medical equipment, *Typewriters, *Laboratory equipment, Clocks, *Manometers, Electric cables, Spectrum analyzers, *Motion-picture projectors, Industrial procurement, Quality control.

Contents:
Leningrad Physicotechnical Institute produces powerful semiconductor rectifiers for industrial use, by G. Andreev and V. Kolosovskii
New infrared part-counting device and thermistors
New electronic illuminator for high-speed photography
Riga Medical Institute builds experimental models of new medical apparatus
Buyers of new typewriters warned against defective workmanship, by A. Aleksandrov
Armavir testing-machine plant advertises new laboratory equipment
Seven-Year Plan pledges of watch plant no. 1 and manometer plant
Moskabel' plant pledges above-plan performance
Growing demand for analytical instruments in industry requires expanded production and wider assortment
Service warranty conditions for domestic motion-picture projectors
Failure of Azerbaidzhan sovnarkhoz to ensure timely delivery of materials threatens output of Kirovabad instrument-building plant, by V. Artemenko
VEF workers join in fight for quality output
Campaign against defective output at VEF electrical engineering plant, by E. Damberg.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 118. 23 Aug 63, 28p.
JPRS: 20780.
Order from OTS $0.75 63-31607

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 5, p. 24-28; Narodnoe Khozyaistvo Kazakhstana (USSR) 1963 [v. 21] no. 5, p. 21 and 14 selected articles from 1963 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, Voltage regulators, Television receivers, Personnel management, Electrical equipment, X-ray photography, Clocks, Radio stations, Electric cables, Sound reproduction systems, Gas analysis, Electron microscopes, Particle accelerators, Fluoroscopes.

Contents:
Are voltage stabilizers needed for all television sets
Advertisement for employment in the radio and electrical engineering industry
Advertisements for sale and purchase of electrical equipment
X-ray apparatus for industrial flaw detection, by E. S. Baran and V. I. Galaktionov
A new time-clock is developed for motor transport
Building the Magadi Radio station in Somali
Production of the Minsk-T radio receivers is discontinued
Introduce specialization of Central Asian cable plants
Selling radio-phonograph combinations in the Ukraine
Improving production at the Vyru gas analyzer plant
New electron microscope developed
The Tallin measuring instruments plant fulfills its plan
Developing a compact particle accelerator
Production of electrical equipment at Leningrad associations
The Lengazapparat plant fulfills its plan
New instruments are developed in Aktyubinsk, by A. Evlampieva.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 122. 26 Sep 63, 31p
JPRS: 21226.
Order from OTS $1.00 63-31828

Trans. of 11 selected articles from 1963 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, Personnel management, Industrial plants, Industrial relations, Refrigeration systems, Kitchen equipment and supplies, Maintenance, *Radio equipment, *Electrets, *Computers, Clocks.

Contents:
Work organization at the Lentelopribor electronics plant, by N. Dolgopol'skaya
Production improvements at the Emal'provod plant, by B. Emsenko
Vacancies at scientific research institute of thermal power instrument building
The "Sever" plant for the repair of refrigerators and household appliances awarded premium for high quality performance, by M. Makhmutov
Lawbreakers at the Konotop Krasnyi metallist plant, by I. Evsikov and V. Kostyuchenko
Achievements of the Novosibirsk radio components plant, by S. Shupta
Instruments operating without a source of current
Problems of the Frunze controlling and measuring instruments plant, by P. Plekhanov and others
Latviyas Berzs plant production is criticized, by M. Frumin
The use of computers for industrial recordkeeping, by L. Kashubskii and G. Popova
Automatic computers for industry.

Borchers, Alwin C.
CONCERNING NEW INVENTION ON LATEST GERMAN DEVELOPMENT OF AUTOMATIC STEERING, SUCCESSFULLY TRIED ON AIRPLANES, TORPEDOES AND WEAPONS, SCHEDULED FOR MASS PRODUCTION, ALSO STEERING OF UNMANNED BODIES. [1963].
Order from SLA $1.10 63-20234

Trans. of unidentified mono., Berlin/Tegel, 31 May 46.

DESCRIPTORS: *Guidance, Automatic, Airplanes, Torpedoes, Weapons, Drones, *Control systems, Electric motors.

Kochnev, F. P.
HIDDEN POSSIBILITIES IN THE TRAFFIC DIAGRAM OF COMMUTER TRAINS. [1963] [7]p.
Order from OTS or SLA $1.10 63-18078

Trans. of Zheleznodorozhnyi Transport (USSR) 1963 [v. 45, no. 1] p. 38-41.

DESCRIPTORS: *Railroads, *Traffic, Transportation, Locomotives, Passenger vehicles, Economics, Costs.

Engines and Propulsion Systems

Belluzzo, Giuseppe.
SOME EXPERIMENTS ON INTERNAL COMBUSTION TURBINES. [1963] 3p (figs omitted)
Order from SLA $1.10 63-18824

Trans. of an article from [an unidentified journal] (original included in "Festschrift Prof. Dr. A. Stodola zum 70. Gerburtstag Überreicht von Seinen und Schulern).

DESCRIPTORS: *Internal combustion engines, *Turbines, Coolant pumps, Water, Cooling, Tests.

An account is given of some experiments intended to test devices suitable for obtaining the necessary cooling, by means of the circulation of water, of units for internal combustion turbines (distributors and mobile wheels), subjected to high temperatures on the part of the engine gases. (Author)

Campini, S.
THEORETICAL ANALYSIS OF THE CAMPINI POWER PLANT [1963] [10p] (refs omitted)
Order from SLA $1.10 63-18829

Trans. of l'Aerotecnica (Italy) 1938, v. 18, no. 1, p. 18-21.

DESCRIPTORS: *Airplane engines, Compressors, Descriptors, *Airplane engines, Compressors, Velocity, *Jet engines, *Jet propulsion, Thrust, Design

Kneule, F.
THE ELECTROACOUSTIC METHOD OF KNOCK MEASUREMENT: SUMMARY. [1963] 1p
Order from SLA $1.10 63-18211

Partial trans. (summary) of [MTZ] Motortechnische Z[eitschrift] (West Germany) 1950, v. 11, no. 2, p. 29-35.

DESCRIPTORS: *Abstract, *Knocking, Internal combustion engine, Measurement, Internal combustion engine noise.

A survey is made of the possibility of measuring knock by an electroacoustic method, and an apparatus therefor, developed in Germany, is described. The procedure is relatively easy to carry out; therefore, it is not limited to single-cylinder engines, but may be employed with advantage for the testing of multicylinder automobile engines at the test station and on the road. The earlier one-cylinder engines were operated at speeds below 1000 r.p.m. because the bouncing-pin indicator did not give complete satisfaction at higher speeds. The electroacoustic method permits an increase in the speed, so operating conditions closer to those of actual car operation were attainable. The relations between the octane number measured on the one-cylinder test engine and the behavior of the fuel during road operation could therefore be determined with increased exactness. Within certain limits this method is of use even for the testing of aviation engines. These limits are determined by the unhindered and uniform propagation velocity of the engine noise. This condition is fulfilled by simply designed series and V-type engines, which are characterized by low degrees of internal geometrical complexity. (Report quoted in its entirety)

Tanzler, H. U.
ROTARY DISPLACEMENT TYPE COMPRESSORS FOR SCAVENGING SMALL TWO-STROKE ENGINES. [1963] [10p] 31refs
Order from SLA $1.10 63-16464

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1943, v. 46, no. 2, p. 31-36.
Another trans. is available from SLA as 58-459.

DESCRIPTORS: *Internal combustion engines, *Rotary compressors, Design, Gas flow.

Machine Parts and Mechanisms

Naidenko, Oleg Konstantinovich and Petrov, Pavel Petrovich.
TYPES OF VIBRATION ISOLATION MOUNTS.
11 Sep 63, 49p. JPRS: 21021.
Order from OTS $1.25 63-31728

Trans. of mono. Amortizatsiya Sudovykh Dvigatelei i Mekhanizmov (Vibration Isolation in Ship Engines and Machinery) Leningrad, 1962, chap. 7, p. 160-199.

DESCRIPTORS: *Vibration isolators, Steel, Springs, Rubber, Synthetic rubber, Vulcanizates, Cork, Mechanical properties, Acoustic insulation, Loading (Mechanics), Design.

Schmidt, Johannes.
DISC-SPOOL MADE OF METAL FOR RECEIVING WIRE, PARTICULARLY THOSE WHOSE DISCS CONSIST OF TWO FLANGED SHEETS CONNECTED TO HOLLOW BODIES. 7 July 47, 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18474

Trans. of German patent 491, 309, 8 Feb 30, cl. 17, gr. 2, granted 23 Jan 30, pat. [from] 25 June 27.

DESCRIPTORS: *Wire-winding machines, Disks, Geometric forms, *Metals, Sheets, Structural parts.

Topics include: Characteristics of the principal materials of the elastic elements of vibration isolation mounts; designs of vibration isolator mounts; and vibration isolation designs for shaft lines, various transmissions and pipe-lines.

Manufacturing Equipment and Processes

CONCEPTS, TERMS AND SYMBOLS FOR THE CLASSIFICATION OF THE SURFACE (Begriffe, Benennugen und Kurzzeichen für den Oberflächencharakter). [1963] [9]p. (foreign text included) 8 refs.
Order from OTS or SLA $1.10 63-18327

Trans. of German standards [specification] DIN 4761, Aug 60, DK 621-288:001.4.

DESCRIPTORS: *Surfaces, Surface properties, Standards, Vocabulary, Classification, *Specifications, Germany.

DETERMINATION OF FORM DEVIATIONS OF THE 2ND TO 5TH ORDERS AT SURFACES ON THE BASIS OF SURFACE SECTIONS: CONCEPTS FOR REFERENCE SYSTEMS AND DIMENSIONS (Erfassung der Gestaltabweichungen 2. bis 5. Ordnung an Oberflächen an Hand von Oberflächenschnitten. Begriffe für Bezugssystem und Masse). [1963] [13]p. (foreign text included).
Order from SLA $1.60 63-18326

Trans. of German standards [specification] DIN 4762, sheet 1, DK 621-288:001.4, Aug 60.

DESCRIPTORS: *Surfaces, Surface properties, Geometric forms, *Standards, Germany.

The standard contains concepts for the reference system and the dimensions for the form deviations of the 2nd to 5th orders which are used in the evaluation of profile sections. Concepts which are generally valid for all orders of form deviations, are established in DIN 4760. For the dimensional determination of form deviations of the 2nd to 5th order further concepts are necessary in addition to those given in DIN 4760. In this standard, the form deviations of the 2nd order (waviness) and form deviations of the 3rd to 5th orders (roughness) are differentiated. (Author)

DETERMINATION OF THE FORM DEVIATIONS OF THE 2ND TO 5TH ORDER AT SURFACES ON THE BASIS OF SURFACE SECTIONS: EVALUATION OF PROFILE SECTIONS WITH FORM AND ENVELOPE PROFILE AS THE BASIS (Erfassung der Gestaltabweichungen 2. bis 5. Ordnung an Oberflächen an Hand von Oberflächenschnitten. Auswertung von Profilschnitten mit Form- und Hullprofil als Grundlage). [1963] [11]p. (foreign text included).
Order from SLA $1.60 63-18324

Trans. of German standards [specification] DIN-4762, sheet 3, DK 621-288, Aug 60.

DESCRIPTORS: *Surfaces, Surface properties, Geometric forms, *Standards, Germany.

The standard covers the dimensional determination for the form deviations of the 2nd to 5th orders (waviness and roughness) by an evaluation of profile sections on the basis of reference profiles which depend upon the course of the actual profile within the reference length. (Author) (See also 63-18325)

DETERMINATION OF FORM DEVIATIONS OF THE 2ND TO 5TH ORDERS AT SURFACES ON THE BASIS OF SURFACE SECTIONS: EVALUATION OF PROFILE SECTIONS WITH GEOMETRICALLY IDEAL REFERENCE PROFILES AS THE BASIS (Erfassung der Gestaltabweichungen 2. bis 5. Ordnung an Oberflächen an Hand von Oberflächenschnitten. Auswertung von Profilschnitten mit Geometrisch-Idealem Bezugsprofil als Grundlage). [1963] [7]p. (foreign text included).
Order from SLA $1.10 63-18325

Trans. of German standards [specification] DIN-4762, sheet 2, DK 621-288, Aug 60.

DESCRIPTORS: *Surfaces, Surface properties, Geometric forms, *Standards, Germany.

The standard discusses the dimensional determination of form deviations of the 2nd to 5th orders (waviness and roughness) by evaluation of profile sections on the basis of a reference profile which is geometrically similar to the geometrically ideal profile. (Author) (See also 63-18326)

GRADATION OF THE ROUGHNESS VALUES FOR SURFACES (Stufung der Masse für die Rauheit von Oberflächen). [1963] [4]p. (foreign text included) 8 refs.
Order from OTS or SLA $1.10 63-18323

Trans. of German standards [specification] DIN 4763, July 60, DK 621-288:621.9.015.

DESCRIPTORS: *Surfaces, *Surface properties, Standards, Measurement, Classification, *Specifications, Germany.

INDUSTRIAL SURFACES (Technische Oberflächen). [1963] [7]p. (foreign text included).
Order from OTS or SLA $1.10 63-18329

Trans. of German standards [specification] DIN 4764, drafted Dec 53, DK 621.9.015:001.4.

DESCRIPTORS: *Surfaces, Classification, Stresses, Standards, Surface properties, *Specifications, Germany.

TERMS FOR THE SHAPE OF SURFACES (Begriffe für die Gestalt von Oberflächen). [1963] [14]p. (foreign text included) 8 refs.
Order from OTS or SLA $1.60 63-18328

Trans. of German standards [specification] DIN 4760, July 60, DK 621-28:001.4.

DESCRIPTORS: *Geometric forms, *Surfaces, Vocabulary, Standards, Surface properties, Classification, *Specifications, Germany.

Hilber, H.
STABILITY MEASUREMENTS ON ROTARY KILN SHELLS BY "SHELLTEST". [1963] 25p. (figs. table refs. omitted).
Order from SLA $2.60 63-18394

Trans. of Zement-Kalk-Gips (West Germany) 1961, v. 14, no. 1, p. 1-16.

DESCRIPTORS: *Rotary furnaces, *Structural shells, Deformation, *Refractory materials, Stresses, Load distribution, Combustion chamber liners.

With the Swedish "Shelltest" instrument in combination with the "Shelltest Recorder" it is possible to determine the kiln shell deformation by a measurement technique. The deformation curves permit inferences to be drawn regarding the maximum shell deformations, loading conditions, roller adjustment, and the state of the kiln shell. On the basis of practical results and having due regard to the conditions for the formation of coatings within the kiln, the relationship between the kiln shell stability and the durability of the lining is tentatively represented in a graph. With reference to the available results obtained from the stability measurements carried out to date, present-day rotary kiln designs are considered in broad outline. (Author)

Kipnis, S. A.
REPRODUCTIBILITÉ ET PRODUCTIVITÉ DE L'USINAGE PAR ÉTINCELLES ÉLECTRIQUES (Reproductibility and Productivity of the Manufacturing by Electric Sparks). 24p. 7 refs. (text in French).
Order from OTS or ETC $1.60 62-26348

Trans. in French of Vestnik Mashinostroeniya (USSR) 1953 [v. 33] no. 8, p. 59-66.
Another trans. is available in English from SLA as RT-4096, 11p.

DESCRIPTORS: Electroerosive machining, *Spark machining, Manufacturing methods, Reproduction.

Kondashevskii, V. V.
ADJUSTMENT OF AUTOMATIC DEVICES CONTROLLING THE DIMENSIONS OF DETAILS DURING MECHANICAL MACHINING: CONSTRUCTION OF TOOLS AND METHODS FOR THEIR ADJUSTMENT, CHAPS. 1-2. 11 June 62 [13]p. FTD-TT-62-578; AD-286 112.
Order from OTS or SLA $1.60 63-23797

Unedited rough draft trans. of mono. Naladka Avtomaticheskikh Priborov Kontrolya Razmerov Detalei pri Mekhanicheskoi Obrabotke; Konstruktsii Priborov i Metody Ikh Naladki, n.p., 1960, p. 5-15.

DESCRIPTORS: *Machine tools, *Cutting tools, *Machining, *Grinders, Automation, Control systems, Industrial equipment, Production, Economics.

Contents:
Classification of devices for actively controlling the dimensions of details on metal cutting machines
Economical effectiveness of devices for controlling dimensions of details in the process of grinding.

Mosyakov, G. V.
STANDARDISATION OF HEATING PRACTICE AND CONTROL IN A COKE OVEN BATTERY, tr. by J. Murray. Jun 59 [9p] DLSL T/144/59; BISI Trans. 1363; [DSIR[NLL M.4725.
Order from OTS or SLA $1.10 62-24229

Trans. of Koks i Khimiya (USSR) 1958, no. 7, p. 26-29.

DESCRIPTORS: *Furnaces, *Coke, Heating, Control, Standardization.

Automatic regulation of the supply of gas and air for heating according to the drop of vacuum in the gas regenerators between ascending and descending streams ensures: (a) a stable vacuum in the inspection holes of the gas regenerators on ascending stream and, consequently, constancy of temperature along the heating walls; (b) constancy of co-efficient of excess of air between pushings; (c) simplification of the regulation of gas and draught over the length of the battery. For correct operation of the heating regime it is necessary to take into account the difference in temperature between the gas and air entering for heating. Heating up of the coke gas must be carried out having regard to the change of temperature of air in the tunnel. (Author)

Transport, Traction and Hoist Facilities

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 93 (LIGHT INDUSTRY, INDUSTRIAL TRANSPORTATION, MACHINE BUILDING, AND RAILROAD TRANSPORTATION SERIES). 1 Oct 63, 7p JPRS: 21262
Order from OTS $0.50 63-31848

Trans. of selected abstracts from Referativnyi Zhurnal. Legkaya Prom[yshlennost'] (USSR) 1963, no. 6; Referativnyi Zhurnal. Prom[yshlennyi] Transp[ort] (USSR) 1963, no. 6; Referativnyi Zhurnal. Tekh[nologiya i] Mashin[ostroenie] (USSR) 1963, no. 6; Referativnyi Zhurnal. Zhelez[nodorzhnyi] Transp[ort] (USSR) 1963, no. 7.

DESCRIPTORS: *Abstracts, *Machines, *Hoists, *Machine tools, *Railroads, Railroad cars, Machine tool industry, *Transportation, Industries.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 94 (AUTOMOBILE AND URBAN TRANSPORT SERIES) (INDUSTRIAL TRANSPORT SERIES) (WATER TRANSPORT SERIES). 1 Oct 63, 3p JPRS: 21263.
Order from OTS $0.50 63-31849

Trans. of selected abstracts from Referativnyi Zhurnal. Avtomobil'nyi Gorodskoi Transport (USSR) 1963, no. 7; Referativnyi Zhurnal. Promyshlennyi Transport (USSR) 1963, no. 3; Referativnyi Zhurnal. Vodnyi Transport (USSR) 1963, no. 7.

DESCRIPTORS: *Abstracts, *Transportation, Cargo trucks, Hoists, Ships (Nonmilitary).

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 43. 11 Oct 63, 23p JPRS: 21422.
Order from OTS $0.75 63-31927

Trans. of Avtomobil'nyi Transport (USSR) 1963 [v. 41] no. 6, p. 25; Lesnaya Promyshlennost' (USSR) 1963 [v. 41] no. 7, p. 5; Mashinostroitel' (USSR) 1963, no. 7, p. 4, 13; Za Rulem (USSR) 1963 [v. 21] no. 7, p. 15; and 14 selected articles from 1963 issues of 10 Russian newspapers.

DESCRIPTORS: *Industrial production, *Automotive industry, Vehicles, Industrial plants, Quality control, Cargo vehicles, Passenger vehicles, Motorcycles, Design, Tires, Maintenance, Trailers, Fuel pumps, Rock (Geology), Cutting tools, Agricultural machinery, Railroad cars, Personnel.

Contents:
Gor'kii motor vehicle plant experiences difficulties in procuring parts, by I. Kiselev
Gor'kii motor vehicle plant rated best in RSFSR
Complaints about poor quality of production, by A. Novikov and R. Logoveev
New MAZ lumber trucks and trailers
New Sputnik passenger car, by Arkadii Simonyan
The tula sports motor scooter, by V. Lopukhin
Towards organizing the repair of heavy tires, by I. Tsiperfin
New UAZ-469 cross country vehicle
New air cushion vehicle developed
Synthetic materials widely utilized in Moskvich-408 car
SDGA stand for testing high pressure fuel pumps
Tashavtomash plant to produce 600 trailers above plan
New rock cutting machine
The Belotserkovsk Avtotraktorodetal' plant
Sokol'niki railway car repair plant fails to live up to commitments
Motor Vehicle Repair Plant no 4 advertises repair work
Motor vehicle industry administration admonished
Riga Sarkana Zvaigzne plant advertises employment openings
New production facility at Erevan plant
Celebration at L'vov bus plant
Ural-375 truck.

Drannikov, Abram Beniyaminovich.
DEVELOPMENT AND MANUFACTURE OF SOVIET LIFT TRUCKS. 29 Aug 63, 14p. JPRS: 20836.
Order from OTS $0.50 63-31639

Trans. of mono. Avtopogruzchiki (Lift Trucks) Moscow, 1962, p. 4-15.

DESCRIPTORS: *Fork lift vehicles, Design, Specifications.

Garskii, E. A.
ECONOMICAL METHOD OF LUMBER TRANSPORTATION WITH "HOOD". [1963] 4p.
Order from OTS or SLA $1.10 63-14725

Trans. of Zheleznodorozhnyi Transport (USSR) 1962, v. 44 [no. 10] p. 74-76.

DESCRIPTORS: *Straps, *Wood, Handling, Hoists, *Railroal cars, *Transportation, Economics.

Experiments with slinged lumber in combined Railroad - Waterway transportation have been conducted. The following results have been obtained: the car-load has been increased by 16% of sawmill timber, or 11% of Railroad Sleepers. The loading-unloading time did not exceed 25 - 30 minutes. Manpower has been reduced from 6 - 8 down to 2 - 3. The experiments also showed that the semi-rigid slings pay for themselves the first time they are used. (Author)

Romanenko, V. D. and Kravets, V. P.
A SUSPENDED DEVICE FOR WASHING BOX CARS. [1963] [4]p.
Order from OTS or SLA $1.10 63-18081

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 12] p. 72-73.

DESCRIPTORS: *Railroad cars, *Cleaning, Water, Nozzles, *Positioning device (Machinery), Pipes.

A method of washing box cars is described. The washing device is attached to a locomotive, which supplies the hot water, by a special telescopic bracket which allows the wash nozzle to be inserted into the box car to be washed. The water stream is directed by one man to any point in the car by rotating the nozzle with the use of a steering wheel, through a reducer, and by pivoting the whole device around a vertical axis.

MATERIALS

DEFOAMER COMPOSITIONS. [1963] 3p.
Order from OTS or SLA $1.10 63-18633

Trans. of French patent 984, 360, 1 Feb 51, by Imperial Chem. Industries, Ltd.

DESCRIPTORS: *Foaming inhibitors, Tannic acids, Ethers, Ethylenes, Glycols, Sodium compounds, Carbonates, Fatty acids, Phosphates, Water, Feed water, Locomotives.

DEFOAMERS. [1963] 4p
Order from OTS or SLA $1.10 63-20045

Trans. of French patent 1,018,241, 30 Dec 52.

DESCRIPTORS: *Foaming inhibitors, Water, Distillation, Steam

The invention relates to a process for the prevention of foam during distillation and provides a novel composition for this end.

PROCEDURE FOR IMPARTING HARD-WATER RESISTANCE TO FATTY MATERIALS AND PRODUCTS DERIVED THEREBY. [1963] 3p.
Order from OTS or SLA $1.10 63-18194

Trans. of French patent 792,880, 11 Jan 36.

DESCRIPTORS: Solubility, *Fatty acids, Aliphatic compounds, Acids, Hydroxides, Alcohols, Sulfonates, Sulfonation, Water, Textile industry, *Cleaning compounds, *Surface-active substances, Stability, Neutralization.

Brunshtein, B. A. and Klimenko, V. L.
METHODS OF PRODUCING SODIUM ALKYL SUPHATES AND THEIR TECHNICAL AND ECONOMIC ASSESSMENT. [1963] [14p] 8refs
Order from OTS or SLA $1.60 63-20044

Trans. of Khimicheskaya Promyshlennost' (USSR) 1961, no. 4 [p. 253-257].
Another trans. is available from ATS $14.45 as ATS-28N58R [1961] 10p.

DESCRIPTORS: *Surface-active substances, *Cleaning compounds, *Sodium compounds, Alkyl radicals, *Sulfates, Manufacturing methods, *Fatty acids, *Alcohols, *Economics.

The production of sodium alkyl sulphates from alcohols, obtained by the direct hydration of synthetic fatty acids, is more advantageous than their production from alcohols from the hydration of butyl esters, not only for lower running costs but for their lower capital costs. The production of higher fatty alcohols and sodium alkyl sulphates from acids produced by direct hydration is more economic than the other methods considered. In the near future the simultaneous production of synthetic fatty acids and sodium alkyl sulphates will be a practical proposition. Production of sodium alkyl sulphates from alcohols derived from the direct oxidation of liquid paraffins in the presence of boric acid is the most practical method. Among the basic advantages of this process is the low degree of sulphonation of the secondary alcohols. This makes it necessary to find some more economic use for these secondary alcohols (amines, flotation agents, additives for fuels and lubricating oils). (Author)

Eipeltauer, E.
TOPOCHEMICAL HYDRATION PROCESSES IN THE SETTING OF GYPSUM PLASTER. [1963] 8p 7 refs.
Order from SLA $1.10 63-18258

Trans. of Zement-Kalk-Gips (West Germany) 1963 [v. 16] no. 1, p. 9-12.

DESCRIPTORS: *Gypsum, *Calcium, *Sulfates, *Hardening, Surface area, Water, Gels, Recrystallization, Chemical reactions.

For the setting and hardening of gypsum plaster Le Chatelier formulated his recrystallization theory, which at the present time still constitutes one of the scientific fundamentals of gypsum technology. The author, however, demonstrates by means of microscopic investigations that, to achieve hydration, calcium sulfate hemihydrate does not first have to go into solution. Even with a large excess of water the hemihydrate particles can become hydrated topochemically and thus change into a gel which is readily recognizable as such by its transparency and formation, its isotropic behavior and its capacity for intensive staining by an aqueous solution of Congo red. Methylene blue does not stain the gel edge zone of the hemihydrate crystals undergoing topochemical hydration. In the technical mortar bed, at medium and low water/gypsum ratios, this primary hydration by topochemical action will even predominate over recrystallization. In order to improve the quality of gypsum plaster, particular attention should in future therefore be paid to the topochemical hydration of the hemihydrate particles and to the investigation of the gypsum gels that are formed. With suitable particle shape and a suitable particle size distribution curve of the hemihydrate plaster the formation of a "gypsum plaster agglutinate" by recrystallization ceases to have such decisive significance, since the gels, because of extensive contact surfaces, are by themselves also quite capable of coalescing properly. (Author)

Lang, Karl Fr.
FIRST RESULTS OF LARGE-SCALE TESTS ON CREOSOTE-IMPREGNATED BEECH SLEEPERS BY THE WEST EUROPEAN INSTITUTE FOR WOOD IMPREGNATION. [1963] [19]p. (4 figs. omitted) 18 refs.
Order from SLA $1.60 63-18923

Trans. of Deutsche Gesellschaft für Holzforschung. Mitteilungen (West Germany) 1961, no. 48, p. 45-52.

DESCRIPTORS: *Wood, *Creosote, *Solvent extraction, Impregnation, Phenols, Pine, Telephone poles, Preservation, Scientific organizations.

Beech sleepers and pine poles, impregnated in 1955 with six creosotes of different compositions, were exposed in three West European testing fields. In 1957 and 1959, two sleepers per testing oil were removed from the three fields and cut into small pieces. These were extracted with toluene in large extraction devices developed for the purpose. The extracted creosotes were examined in respect of their physical and chemical condition and compared with the original oils whereby the changes after 2 years' and 4 years' exposure could be established. The extraction method used as well as the extraction apparatus is described. The results and changes are evaluated. (Author)

Longuet, Paul.
APPLICATIONS OF THERMOGRAVIMETRY TO THE CHEMISTRY OF CEMENT. [1963] 55p (figs. omitted) 46refs
Order from SLA $5.60 63-18497

Trans. of Revue des Materiaux de Construction [et de Travaux Publics. Edition C] (France) 1960, no. 537 [p. 139-148]; no. 538/539 [p. 183-189]; no. 540 [p. 233-243].

DESCRIPTORS: *Cements, *Gravimetric analysis, *Thermochemistry, Calcium compounds, Slags, Hydrates, Oxides, Balances, Dehydration, Carbonization, Carbon compounds, Hydroxides, Dissociation, Oxidation-reduction reactions, Aluminum compounds, Silicates.

Thermo-gravimetry is becoming a current laboratory technique. The article deals, more particularly, with the investigations, carried out for some years past at the Hydraulic Binder Research Station with the Chevenard thermo-balance. Some original devices are described. The basic principles of thermo-gravimetry are dealt with in detail. Following a review of the basic reactions in cement chemistry: dehydration, carbonation, decarbonation, oxidation-reduction... particular investigations are dealt with. First, those concerning pure anhydrous, and hydrated products, then those concerning either raw materials or fabricated products. Analytical applications are then described. Amongst the investigations carried out, mention should be made of: separate determination of CaO and $Ca(OH)_2$ in the "free lime" of a clinker or a cement, investigation of the composition of the product of dehydration of cubic hydrated aluminum tricalcium, evaluation of the tricalcium silicate phase in a ground cement. (Author)

Machemer, H.
THE GUERBET REACTION AND ITS TECHNICAL IMPORTANCE. [1963] [28]p. (figs. tables omitted) 206 refs.
Order from SLA $2.60 63-18691

Trans. of Angew[andte] Chemie (West Germany) 1952, v. 64, 21 Apr, p. 213-220.

DESCRIPTORS: *Alcohols, *Surface-active substances, *Detergents, *Cleaning compounds, Alkylation, Condensation reactions, Molecular isomerism.

Man'kovskaya, N. K. and Getmanskaya, Z. I.
ISO ACIDS AS COMPONENTS OF COMMERCIAL SYNTHETIC FATTY ACIDS. [1963] 8p. 9 refs.
Order from OTS or SLA $1.10 63-18259

Trans. of Masloboino-Zhirovaya Promyshlennost' (USSR) 1962, v. 28, no. 1, p. 16-21.
Another trans. is available from ATS $9.50 as ATS-70Q69R [1963] 8p.

DESCRIPTORS: *Fatty acids, *Odors, *Soaps, *Cleaning compounds, Petroleum, Physical properties, Urea, Oxidation, Complex compounds, Naphthenic acids

Commercial C_{10}-C_{16} and C_{17}-C_{20} fractions of synthetic fatty acids obtained by the oxidation of purified paraffin wax from petroleum contain 20-27% of acids which give no complexes with urea. Of these, 30-35% is represented by iso acids with small side chains in the radical and an average molecular weight close to that of the normal acids. These acids are solid and without odor. Of the acids not giving complexes with urea, 40-45% represents naphthenic acids which do not crystallize upon cooling to -21°C, and have a red-brown color and a characteristic unpleasant odor. (Author)

Martin, G.
THE STUDY OF INK AND PAPER RELATIONSHIPS ON PROOF PRESSES (Considerations sur l'Etude des Relations Encre-Papier à l'Aide des Presses Miniatures). [Mar 63] [119]p. (refs. omitted) 17 refs.
Order from SLA $9.60 63-18287

Partial trans. of l'Imprimerie Nouvelle (France) 1961, Sep, p. 3-16; Oct, p. 3-22; Nov, p. 3-16; Dec, p. 13-16; 1962, Feb, p. 15-26; Mar, p. 3-23.

DESCRIPTORS: *Printing, *Ink, *Paper, Mechanical properties, Absorption (Physical), Density.

Contents:
Study of transfer
Study of plucking: analysis of speed
Study of drying, show-through, and strike-through

Venuat, Michel.
SHRINKAGE, EXPANSION AND CRACKING IN CEMENT MORTAR AND CONCRETE: REPORT OF RESEARCH. [1963] 100p. (figs. omitted) 13 refs.
Order from SLA $8.60 63-18502

Trans. of Revue des Materiaux de Construction [et de Travaux Publics. Edition C] (France) 1960, no. 538/539, p. 169-182; no. 540, p. 215-231; no. 541, p. 251-276.

DESCRIPTORS: *Concrete, *Mortar, *Cements, Construction materials, Deformation, Water, Storage, Aging (Materials), Fracture (Mechanics).

The article deals with the conclusions arrived at as a result of 8 years research carried out at the Hydraulic Binder Research Station, on shrinkage, swelling, and fissureability. Mention is made of the general test procedure together with the precautionary measures to be taken for the purpose of the experiments. The various parameters likely to affect the accuracy of the results are studied. Research has been carried out with pure paste, mortar and concrete. The majority of the investigations mentioned concern 1/3 Iso - Rilem-Cembureau mortar, which offers considerable advantages. The effects on shrinkage, of the fineness of grinding of cement, the chemical composition of the cement, diverse admixtures, together with the proportioning, are studied. A short-cut test procedure on small test pieces of 2 x 2 x 16 cms is suggested. The essential factors of the tests carried out on concrete are studied: proportion of water, cement, aggregates, effects of initial storage. Some corelations between the shrinkage of pure paste, mortar and concrete have been established. Swelling of pure paste, mortar and concrete is dealt with, more

particularly concerning the W/C ratio, age of cement, percentage of SO_3, the effects of slag, and chlorides. The work on fissurability, carried out on a pure paste ring, covers a considerable number of factors, including age of stripping, storage medium, nature and fineness of cement, SO_3 content, and diverse admixtures. (Author)

Adhesives and Sealants

PROCESS FOR ASSEMBLING INDUSTRIAL MATERIALS AND A GLUE FOR THIS PURPOSE. [1963] 21p. 2 refs.
Order from OTS or SLA $2.60 63-18630

Trans. of French patent 930,609, issued 18 Aug 47, pub. 30 Jan 48, by Ciba.

DESCRIPTORS: *Adhesives, *Thermosetting plastics, *Phenolic plastics, Materials, Metals, *Bonding, Aging (Materials).

Espe, Werner.
FERRITIC CHROMIUM ALLOY STEELS FOR VACUUM-TIGHT GLASS-TO-METAL SEALS. [1963] 47p. (figs. omitted) 31 refs.
Order from SLA $4.60 63-18930

Trans. of Vakuum-Technik (West Germany) 1955, v. 4, no. 4/5, p. 82-100.

DESCRIPTORS: *Adhesives, *Vacuum seals, *Steel, Chromium alloys, Iron alloys, *Seals (Stoppers).

The CrFe alloys used for glass-to-metal seals have a chromium content of 17-30%, Mo, Nb, Ti, Ta, or Si -- depending on the maker -- being added to the low-chrome alloys to improve their structural stability and make the material easier to machine. The formation of vacuum-tight seals between wires, rods, rings, caps, etc. and ordinary soft industrial glasses is relatively simple, since the alloy: (1) -- as distinct from Kovar -- has a practically linear expansion characteristic, provided care is taken (perhaps by means of a separate "normalization" process) to see that the ferritic structure is retained; (2) has no tendency to overoxidation. Fusion is followed by the formation of an extremely stable coating of chromium oxide, which, however, is difficult to remove from free surfaces not covered with glass, a shortcoming which can often make an electrical contact hard to obtain. The soldering and welding of the alloy to other metals -- except nickel -- also require special techniques. The properties, manipulation, and applications of the alloy are described in the following sections: (1) Production and semifinished products. (2) Physical properties. (3) Chemical properties. (4) Soldering and weldments. (5) Surface treatment. (6) Applications connected with the manufacture of glass-to-metal vacuum-tight seals. (Author)

Kardashov, D. A., ed.
BONDING AGENTS AND THE TECHNOLOGY OF ADHESIVE BONDING: COLLECTION OF ARTICLES. 6 June 63 [383]p. refs. FTD-TT-62-1617.
Order from OTS or SLA $21.00 63-23736

Unedited rough draft trans. of mono. Klei i Tekhnologiya Skleivaniya [Sbornik Statei] Moscow, 1960, 285p.

DESCRIPTORS: *Adhesives, *Thermoplastics, *Thermosetting plastics, Isocyanate plastics, Optical materials, Adhesion, *Bonded points, Theory, Bonding, Surface properties, Mechanical properties, Glass textiles, Test methods, Aeronautics

Contents:
Foreword
The electrical theory of adhesion, by V. P. Smilga and B. V. Deryagin
Nature of adhesion phenomena, by N. A. Krotova and L. P. Morozova
The diffusion theory of adhesion, by S. S. Voyutskii
Chemical surface modification of solids as a method of regulating their adhesive properties, by A. Ya. Korolev
The mechanism of welding of organic glasses, by N. A. Grishin
Problems of strength of bonded joints, by Z. E. Shnurov
Adhesives for bonding metals and nonmetallic materials, by D. A. Kardashov
Thermostable adhesives based on copolymers of polyvinylacetals, phenolic resins and silicon-organic compounds, by Z. G. Ivanova and M. V. Sobolevskii
Thermostable phenol-rubber adhesives, by V. N. Solov'eva and D. A. Kardashov
Thermostable adhesives based on silicon-organic resins, by V. I. Pakhomov
Epoxy resins for bonding metals and nonmetallic materials, by V. I. Bek and others
The VS-10-M synthetic adhesive, by M. V. Sobolevskii and others
Synthetic adhesives and MPF-1 adhesive sheet, by L. M. Slepakov and others
L-4 adhesive, by I. Z. Chernin and I. A. Goroshkova
Thermostable adhesives for bonding-on glass-fiber heat-insulating materials, by V. N. Solov'eva and others
Thermostable adhesives for gluing silicone rubbers to metals, by S. K. Zherebkov and others
Ts-7-165-32 cement, by V. T. Stepanova and others
OK-50 optical cement, by L. V. Sergeyev
Use of adhesives in stress-bearing units of all-metal airframes, by I. I. Mikhalev
Use of adhesives to bond articles made from nonmetallic materials, by N. I. Artamokhin and M. S. Sharonova
Bonding metallic designs with thermostable adhesives, by Z. N. Kolobova and I. I. Mikhalev
Production procedure for bonded metallic honeycomb designs, by V. E. Bersudeskii
Bonded-and-welded joints in aircraft designs, by A. I. Pugachev and others
Bonding of textolites, glass textolites and foam plastics to themselves and in combination with metals, by I. I. Mikhalev
Use of bonded and bonded-and-riveted joints in aircraft repair, by Yu. B. Boryunov
Use of bonded joints in aircraft manufacture, by Z. Z. Terent'eva
Mechanical testing of bonded joints, by B. I. Panshin

Long-term strength and endurance of metal-to-metal bonded joints, by I. T. Shvetsov and G. I. Buyanov
Modern methods of flaw detection for bonded joints, by Yu. B. Lange

Korolev, A. Ya., Bek, V. I., and Grishin, N. A.
ADHESION OF POLYTETRAFLUOROETHYLENE TO METALS. [1963] [12]p. 8 refs.
Order from OTS or SLA $1.60 63-18927

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 9, p. 1412-1418.

DESCRIPTORS: Adhesion, *Fluorides, *Ethylenes, Polymers, Metals, *Adhesives, Joints, Steel, Stainless steel, Mechanical properties.

It is shown that Ftoroplast-4, which has several valuable physico-technical and chemical properties, can be used as a glue for metals. Gluing is effected by heating under pressure metal specimens with an interlayer of Ftoroplast to temperatures exceeding the melting point of the crystallites in the polymer and then cooling the specimens. It is shown that the peel strength of glued joints in steel reaches 1000-1500 g/cm, and the strength under normal pull and shear is about 130-150 kg/cm^2. The glued joints have very high strength, up to 100 kg/cm, under nonuniform pull. In this index joints formed with Ftoroplast are superior to joints formed with other known glues. The conditions for the formation of a strong adhesive bond at a metal-Ftoroplast interface are considered and the nature of the forces involved in the formation of this bond is discussed. Joints formed in stainless steel with Ftoroplast are of great interest owing to the high resistance of this polymer to the action of aggressive chemical agents. (Author)

Ceramics and Refractories

Alegre, R.
EMISSION OF SILICON-ALUMINUM REFRACTORIES IN THE INFRARED SPECTRUM (Emission des Réfractaires Silico-Alumineux dans le Spectre Infrarouge). [1963] [24p] (foreign text included) 2refs
Order from SLA $2.60 63-18694

Trans. of Silicates Industriels (Belgium) 1958 [v. 23] no. 5, p. 253-260.
Another trans. is available from SLA mi$2.70, ph$4.80 as 61-14470 [1961] [23]p.

DESCRIPTORS: *Aluminum compounds, Oxides, *Silicon compounds, Dioxides, *Refractory materials, Spectrographic analysis, Infrared radiation, Emissivity.

For abstract see Technical Translations 5: 691, 1961.

Daragan, B.
CONSIDERATIONS ON THE MANUFACTURE OF SELENIUM CADMIUM RUBY GLASS AND PHENOMENA CONCERNED WITH IT. Aug 63
Order from BGIRA BGIRA-574

Trans. of Verres et Refractaires (France) 1951, v. 5, p. 15-19.

DESCRIPTORS: *Glass, Ruby, Cadmium, Selenium, Manufacturing methods.

Foex, Marc.
CERAMIC BODIES FORMED FROM Al_2O_3 AND V_2O_3 (Sur Quelques Properties des Ceramiques Formees par l'Alumine et le Sesquioxyde de Vanadium). [1963] 6p. (figs. omitted) 12 refs.
Order from SLA $1.10 63-18435

Trans. of Silicates Industriels (Belgium) 1952, v. 17, p. 326-329.

DESCRIPTORS: *Ceramic materials, *Aluminum compounds, *Vanadium compounds, Oxides, Crystal structure, Electrical properties, Material forming *Dielectrics. *Semiconductors.

Geffcken, W[alter] and Berger, E.
FUNDAMENTALS OF CHEMICAL DURABILITY OF GLASS, II. [1963] 22p (figs refs omitted)
Order from SLA $2.60 63-20143

Trans. of Glastechn[ische] Ber[ichte] (Germany) 1938, v. 16 [no. 9] p. 296-304.

DESCRIPTORS: *Glass, Surfaces, Liquids, Reaction kinetics, Quantitative analysis, *Corrosion, Solvent extraction, Adsorption, Interferometers.

Gehlhoff, Georg.
THE PHYSICS OF GLASS. [1963] [41p] 33 refs
Order from SLA $4.60 63-20138

Trans. of Glastechnische Berichte (Germany) 1928, v. 6, no. 8, p. 414-447.

DESCRIPTORS: *Glass, Viscosity, Electrical conductivity, Fracture (Mechanics), Chemical analysis, Transformations, Mechanical properties.

Hensel, Bernhard.
PROCEDURE FOR THE MANUFACTURE OF CONDUCTING, AND ESPECIALLY TRANSPARENT COATINGS ON GLASS SURFACES (Verfahren zum Herstellen Leitender, Insbesondere Transparenter Überzüge auf Glasoberflächen). [1963] [4p] (foreign text included)
Order from OTS or SLA $1.10 63-18619

Trans. of German patent 1,029,988, cl. 32b, gr. 10, internat. cl. C 03 c, appl. filed under no. A26653 IVc/32b, 27 Feb 57, opened for inspection 14 May 58, by Auergesellschaft AG.

DESCRIPTORS: *Glass, Surfaces, *Dielectric films, *Coatings, Tin compounds, Impregnation, Electrical conductance, Chlorides

The invention concerns a procedure for the manufacture of conducting, especially transparent coatings upon glass surfaces, at which the conducting material, especially a tin compound is precipitated from another medium upon the glass plate. As a medium an absorbent mass, like a ceramic material, a glass frit or metal oxides (aluminum oxide, magnesium oxide etc.) is employed,

and the tin compound is expelled therefrom by a heating so that the vapor from the tin compound is precipitated upon the heated glass plate. The absorbent mass, after it is impregnated with the tin compound, is coated with a covering layer which prevents a reaction with the moisture of the air, which layer will volatilize when the tin compound is expelled. (Author)

Hensel, Bernhard and Born, Werner.
PROCEDURE FOR THE MANUFACTURE OF CONDUCTING, AND ESPECIALLY TRANSPARENT COATINGS ON GLASS SURFACES (Verfahren zum Herstellen Leitender, Insbesondere Transparenter Überzüge auf Glasoberflächen). [1963] [4p] (foreign text included)
Order from OTS or SLA $1.10 63-18620

Trans. of German patent 1,029,989, cl. 32b, gr. 10, internat. cl. C 03 c, appl. filed 28 Feb 57 under no. A 26655 IVc/32b, opened for inspection 14 May 58, by Auergesellschaft AG.

DESCRIPTORS: Surfaces, *Glass, *Coatings, Tin compounds, Electrical conductance, Manufacturing methods, Chlorides, *Dielectric films, Protective treatments

The invention involves a procedure for the manufacture of conducting, especially transparent coatings upon glass surfaces, at which the conducting material, especially a tin compound, is deposited from another medium upon the glass surface. The tin compound, preferably tin tetrachloride is dissolved in a solvent which burns with a flame which does not develop any soot, or does not burn at all, and that the solution is placed upon a heatable, incombustible carrier from which it is evaporated upon the glass surface which is heated prior to such vapor precipitation. As transfer medium absorbents, incombustible materials, like ceramic masses, glass frits or metal oxides (like aluminum oxide or magnesium oxide), are used. (Author)

Jaeckel, Georg.
THE DECOLORIZATION OF GLASS. [1963] 24p (figs. tables omitted) 7refs
Order from SLA $2.60 63-20147

Trans. of Glastechnische Berichte (Germany) 1930, v. 8, no. 5 [p. 257-265].

DESCRIPTORS: *Glass, *Colors, Light transmission, Chemical reactions, Absorption, *Reduction (Chemistry), Permeability, Iron compounds, Oxides.

Kindt, B.
BEHAVIOR OF GLASS DURING MECHANICAL WORKING OF A SPECIAL SORT. [1963] 5p (figs. omitted)
Order from SLA $1.10 63-20139

Trans. of Glastechnische Ber[ichte] (Germany) 1935, v. 13 [no. 7] p. 245-247.

DESCRIPTORS: *Glass, Mechanical working, Machine tools, Mechanical properties.

Kordyuk, R. A. and Gul'ko, N. V.
SUBSOLIDUS STRUCTURE AND TERNARY COMPOUNDS IN THE SYSTEM $CaO-Zr)_2-SiO_2$. 5 Dec 62 [6]p. 3 refs.
Order from OTS or SLA $1.10 63-10319

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, no. 3, p. 639-641.

DESCRIPTORS: *Ceramic materials, *Phase studies, *Calcium compounds, *Zirconium compounds, *Silicon compounds, Oxides, *Crystal structure, X-ray diffraction analysis, Chemical reactions.

Lehmann, H. and Thormann, P.
INVESTIGATION OF RAW MATERIALS BY MEANS OF DILATOMETRY COMBINED WITH DTA. [1963] 15p. 10 refs.
Order from SLA $1.60 63-16983

Trans. of Tonindustrie-Zeitung (West Germany) 1962, v. 86, no. 24, p. 606-612.

DESCRIPTORS: *Construction materials industry, *Cements, *Brick, *Ceramic materials, Limestone, Thermal expansion, *Calorimetry

The method and procedure used at the Institute for Bricks and Clay of the Clausthal Mining Academy in their development of a combined DTA/DS apparatus are described and recommendations are given for the improvement of this apparatus and for the interpretation of the results. The method was first used for structural raw materials and ceramic masses and, later, on burned samples or also on limestone. Numerous cement raw mixes and cement raw materials with highly dissimilar expansion-shrinkage behavior (DS), were studied over the last three years. A comparison of DS behavior alone of the raw materials of a cement raw mix with the DS values of the raw mix itself does not yield a decisive explanation of the curve trend. Only combined DS and DTA curves provide the first reference points. Through a combination with other methods of investigation, the individual effects, i.e. maxima and minima, in DTA and DS curves can be explained. Relationships and functions were thus revealed which will shortly eliminate the laborious use of supplementary test methods. The DTA and DS curves, predominantly affected by lime de-oxidation, obscured the interpretation of other effects. This was explained on examples and a comparison of highly dissimilar curves. In this manner the effect of the clay component on "early de-oxidation" with the associated formation of α'-C_2S and the formation of C_3A are explained. The dissimilar trend of the DS curves may be attributed to dissimilar behavior during firing. (Author)

McClurg, William Blair and Wellech, Edmund Henrich.
IMPROVEMENTS OF THE PRESSING OF GLASS ARTICLES (Perfectionnements au Pressage d'Articles en Verre). [1963] [20p]
Order from OTS or SLA $1.60 63-18579

Trans. of Belgian patent 586,808, appl. 21 Jan 60 (Priority: U. S. A., 22 Jan 59, no. 788,419) by Corning Glass Works.

DESCRIPTORS: *Glass, Material forming, Presses (Machinery), *Optical glass, Lenses, Telescope lenses, Molding.

The invention involves a process for the manufacture of a glass article, which comprises pressing a charge of molten glass between the molding surfaces of two facing pressing elements surrounded with elements keeping the glass within the space between the edges of the surfaces of the pressing elements, moving the pressing elements to each other to form there between an object under the form of two surfaces, removing one of the edges when the article is molded and before a substantial heat evolution occurs through said edge, thereby providing an evolution of heat through the zone disposed under the cleared surface and causing the article to return in said localized zone. (Author)

Mickley, Erich and Thomas, Max.
ON THE MECHANICAL PRODUCTION OF THIN-WALLED HOLLOW GLASS OBJECTS FROM TUBING (Uber die Maschinelle Herstellung Dünnwandiger Hohlglaskörper aus Rohr). Lecture at the Glass-Technical [Meeting] (no. 27) Freiburg, 13 May 53. [1963] [17p] (foreign text included).
Order from SLA $1.60 63-18580

Trans. of Glastechnische Berichte (West Germany) 1953, v. 26, no. 7, p. 197-201.

DESCRIPTORS: *Glass, Liquids, Pipes, *Incandescent lamps, Lighting equipment, Geometric forms, Machines, Walls, Production.

Some procedures, several of them new, are described, by which thin-walled, small hollow glass objects, preferably incandescent bulbs, are made mechanically from tubing. (Author)

Mouly, Raymond Jules.
DEVICE FOR CONTINUOUS CALIBRATION OF A TRANSPARENT TUBE DURING DRAWING (Dispositif de Calibrage Continu d'un Tube Transparent en Cours d'Etirage). [1963] [23p]
Order from OTS or SLA $2.60 63-18581

Trans. of Belgian patent 590,908, 17 May 60 (Priority: U.S.A., 27 May 59, no. 816,284) by Corning Glass Works.

DESCRIPTORS: *Calibration, *Pipes, Glass, *Drawing (Machine processing)

The device for continually calibrating a transparent tube during drawing, characterized in that it comprises a device for forming an image of the tube, a device for scanning this image in a plane perpendicular to the drawing axis of the tube, and a device for detecting the selected portions of the image which correspond respectively to the inside diameter, to the outside diameter, and to the wall thickness of the tube. (Author)

Neumann, C. and Dietzel, A.
THE PIGMENT BODIES IN THE SO-CALLED CARBON-YELLOW GLASSES. I. ON COLORING GLASS BY MEANS OF COLLODIAL CARBON. [Presented] at the Glass Technical Meeting (no. 21) Berlin, 15-17 Feb 38. [1963] [7p] 19refs
Order from SLA $1.10 63-20142

Trans. of Glastechnische Berichte (Germany) 1938, v. 16 [no. 12] p. 389-391.

DESCRIPTORS: *Glass, *Pigments, Carbon, Colloids, *Colors, *Sulfides, Chemical analysis.

Neumann, C. and Dietzel, A.
THE PIGMENT BODIES IN THE SO-CALLED CARBON-YELLOW GLASSES. II. THE COLORING BY POLY-SULFIDES OF GLASSES FREE OF HEAVY METALS. [Presented at the Glass Technical Meeting (no. 21) Berlin, 15-17 Feb 38. [1963] [15p] (figs omitted) 8refs
Order from SLA $1.60 63-20146

Trans. of Glastechnische Berichte (Germany) 1939, v. 17 [no. 10] p. 286-290.

DESCRIPTORS: *Glass, *Pigments, *Sulfides, Carbon, *Colors, Iron compounds, Sodium compounds, Sulfates, Chemical analysis.

(See also 63-20142)

Schardin, H. and Struth, W.
HIGH-FREQUENCY CINE-PHOTOGRAPHIC INVESTIGATION OF THE CRACKING PROCESSES IN GLASS [Hochfrequenzkinematographische Untersuchung der Bruchvorgänge im Glas]. Given at the Glass Technical Congress (no. 21) Berlin, 16 Feb 38. [1963] 19p (figs refs omitted)
Order from SLA $1.60 63-20145

Trans. of Glastechnische Berichte (West Germany) 1938, v. 16 [no. 7] p. 219-227.
Another trans. is available from SLA $2.60 as 62-16466 [1962] [24p].

DESCRIPTORS: *Glass, Fracture (Mechanics), Photographic analysis, High frequency.

Schill, Frantisek and Kralove, Hradec.
A METHOD FOR THE MANUFACTURE OF FOAM GLASS (Verfahren zum Herstellen von Schaumglas). [1963] [6p] (foreign text included)
Order from OTS or SLA $1.10 63-18591

Trans. of German patent 1,010,707, R 18656 IVc/32b, appl. 6 Apr 56, issued 19 Jun 57 (Priority: Czechoslovakia, 14 Apr 55) by Retenicke Skalrny Narodni Podnik Teplice Retenice, Czechoslovakia.

DESCRIPTORS: *Expanded glass, Manufacturing methods, Hydrogen compounds, Sulfides, Chemical bonds, Oxides, Gases, Reduction (Chemistry)

The invention relates to a method for preparing foam glass by heating a mixture of powdered glass, containing sulfur trioxide, and carbon dust in molds at a tem-

perature near the softening point of the glass, characteristized by the fact, that the hydrogen sulfide evolved during the heating of this mixture is bonded into a nonvolatile sulfide with oxides, hydroxides, or other compounds of the heavy metals such as iron, nickel, manganese, or chrome. (Author)

Smekal, Adolf.
THE NATURE OF THE INFLUENCE OF WIDTH OF SPECIMEN ON THE BENDING STRENGTH OF FLAT GLASS. [1963] 6p (refs omitted)
Order from SLA $1.10 63-20140

Trans. of Glastechn[ische] Ber[ichte] (Germany) 1937, v. 15 [no. 7] p. 282-285.

DESCRIPTORS: *Glass, *Optical glass, Loading (Mechanics), Rupture.

Smekal, Adolf.
THE NATURE OF THE MECHANICAL STRENGTH PROPERTIES OF GLASS. [1963] 25p (figs. refs omitted)
Order from SLA $2.60 63-20141

Trans. of Glastechnische Berichte (Germany) 1937, v. 15, no. 7, p. 259-270.

DESCRIPTORS: *Glass, Mechanical properties, Brittle materials, Fracture (Mechanics)

Smekal, Adolf.
THE SIGNIFICANCE OF SCHARDIN'S VELOCITY OF BREAK PROPAGATION [Bedeutung der Schardin'schen Bruchausbreitungsgeschwindigkeit]. Application of paper read at the Glass Technologists Meeting (no. 21) Berlin, 16 Feb 38. [1963] 16p (figs. refs omitted)
Order from SLA $1.60 63-20144

Trans. of Glastechnische Berichte (Germany) 1938, v. 16 [no. 7] p. 228-231.
Another trans. is available from SLA $1.60 as 62-14905 [1962] [20p].

DESCRIPTORS: *Glass, Fracture (Mechanics), Brittle materials, Propagation, Velocity

Trzaszczka, Josef.
A METHOD OF MANUFACTURE OF WHITE OR COLORED, OPAQUE ENAMELS UNDER APPLICATION OF LEUCONIN OR ANTIMONY OXIDE (Sposob Otrzymywania Szkliw Bialych i Kolorowych Zmeinionych z Zastosowaniem Leukoniny albo Tlenku Antymonu). [1963] [6p] (foreign text included)
Order from OTS or SLA $1.10 63-18587

Trans. of Polish patent 40,975, cl. 80 b, gr. 23/03, issued 10 Apr 58, term started 23 Jan 57, by Factory for Faiences and Technical Ceramics.
Another trans. is available from OTS or SLA $1.10 as 61-10999 [1961] 4p

DESCRIPTORS: *Ceramic coatings, *Leuconin, *Antimony compounds, *Oxides, Clay minerals.

The method is characterized in that to the batch is added leuconin or antimony oxide which first has been burnt together with kaolin or clay.

Weissenberg, Gustav.
A METHOD FOR MIXING ALKALI AND HYDROFLUORIC ACID RESISTANT GLASSES (Verfahren zur Herstellung Alakliund Flusssäurebeständiger Gläser). [1963] [4p] (foreign text included)
Order from OTS or SLA $1.10 63-16212

Trans. of German patent 825,738, cl. 32b, gr. 1, p. 54828 VIb/32bD, 20 Dec 51, pat. from 14 Sep 49 notification of granting 22 Nov 51.

DESCRIPTORS: *Glass, Melting, Mixtures, Calcium compounds, Fluorides, Silicic acids, Oxides.

The invention pertains to a method for making glasses, which are resistant to alkalies and hydrofluoric acid, characterized by the fact that a mixture of one or more fluorides from the second group in the periodic system and one or more of the glass-forming oxides from the fourth group is melted yielding a glass which is formed into articles by common industrial techniques. The glass may be melted (from a mixture) containing from 10 to 80 mole percent calcium fluoride with the remainder silicic acid. The melting operation is carried out at a temperature which is above the melting point of the glass-forming oxide. (Author)

Wille, R.
MODEL EXPERIMENTS ON MOLD COOLING (Modellversuche zur Formenkühlung). [1963] [12p] (foreign text included).
Order from SLA $1.60 63-18692

Trans. of mono. (lecture) from Deutsche Glastechnische Gesellschaft, Specialty Committee IV, 20 Apr 56.

DESCRIPTORS: *Glass, Molding, Heat transfer, Air-cooled, Cooling.

Investigations were made, with regard to the air-cooling of glass, molds, to establish whether there is a certain quantity of air and flow velocity at which the necessary blower output becomes a minimum, and what this minimum, and what this minimum appears to be.

Wille, R.
MODEL EXPERIMENTS ON THE AIR COOLING OF GLASS MOLDS: INTERIM REPT (Modellversuche über die Luftkükhlung von Glasformen). [1963] [36p] (foreign text included).
Order from SLA $3.60 63-18941

Trans. of mono. (lecture) from Deutsche Glastechnische Gesellschaft, Specialty Committee IV, 5 Apr 57.

DESCRIPTORS: *Glass, Molding, Heat transfer, Air-cooled, Cooling.

An investigation was made of the effect of various molds and arrangements of cooling air nozzles on a simplified model of a bottle mold. By variation of the air velocity and air quantity, the minimum air output for a predetermined amount of heat was established. (Author)
(See also 63-18692)

HT-OILS B AND PB FOR USE AS HYDRAULIC LUBRICANTS. [1963] 2p
Order from SLA $1.10 63-18682

Trans. of unidentified mono. (brochure) pub. by Farbenfabriken Bayer, Leverkusen, n.d.

DESCRIPTORS: *Oils, *Hydraulic fluids, Lubricants, Viscosity, *Lubrication.

IMPROVEMENT IN FUEL PRODUCTS. [1963] 5p
Order from OTS or SLA $1.10 63-18654

Trans. of French patent 863,630, 1 Mar 40, by Standard Oil Development Co.

DESCRIPTORS: *Fuels, Corrosion inhibition, *Fuel additives, Esters, Phosphorus compounds, Aryl radicals, Internal combustion engines.

Anders, H.
THE PECULIARITIES OF THE CATALYSTS FOR THE FISCHER-TROPSCH SYNTHESIS WITH REFERENCE TO THE COMPOSITIONS AND PROPERTIES OF THE REACTION PRODUCTS. [1963] 7p
Order from SLA $1.10 63-20151

Trans. of Chem[ische] Techn[ik] (East Germany) 1950, v. 2, no. 1, p. 27-29

DESCRIPTORS: *Gasoline, Synthesis (Chemistry), *Catalysts, Oxides, Gases, Carbon compounds, Monoxides, Hydrogen, Chemical reactions.

Broeze, J. J. and Stillebroer, C.
UTILIZATION OF LEAN MIXTURES IN AVIATION ENGINES: ADAPTATION OF ENGINE AND FUEL TO THE OPERATION OF AVIATION ENGINES ON LEAN MIXTURES. [1963] 11p (figs omitted)
Order from SLA $1.60 63-18217

Trans. of Rev[ue de l]'Institut] Franç[ais du] Pétrole [et Annales des Combustibles Liquides] 1949, v. 4, p. 653-660.

DESCRIPTORS: *Aviation fuels, *Fuel consumption, *Airplane engines, Operation, Ingnition, Ignition lag.

Fuel economy is the main incentive to lean mixture operation. The factors are discussed which limit in practice the application of lean mixtures and restrict the advantages theoretically to be gained. Experiments showed that combustion delay following ignition is the principal restricting factor, not combustibility. Augmented gas movement is an effective means of shortening the delay. Restrictions imposed on the augmentation of swirl in aricraft engines are discussed. Characteristics of the ignition system, compression ratio, intake pressure and temperature are further factors which affect lean mixture performance. Within the narrow range of fuels eligible for aircraft operation, the influence of fuel properties on lean mixture performance is only slight. Several methods are indicated which offer a prospect of improving lean mixture operation. (Author)

Calcott, William S., Parmelee, Alfred E., and Lorriman, Frederick R.
IMPROVEMENT IN THE PROCESS FOR SYNTHESIZING TETRAETHYLLEAD. [1963] 3p
Order from OTS or SLA $1.10 63-18652

Trans. of French patent 638,103, filed 22 Jul 27, issued 14 Feb 28, pub. 16 May 28 (appl. filed in U.S.A., 3 Nov 26).

DESCRIPTORS: *Lead compounds, *Ethyl radicals, Synthesis (Chemistry), Sodium compounds, Potassium compounds, Chlorides.

Chen, Shao-li.
THE STATE OF THE ART IN LUBRICANT RESEARCH AND THE TREND OF DEVELOPMENT. 11 June 63 [14]p. FTD-TT-63-267.
Order from OTS or SLA $1.60 63-23654

Unedited rough draft trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1962, no. 2, p. 9-13.

DESCRIPTORS: *Lubricants, Machines, Lubrication, Petroleum, Additives, Friction, Corrosion inhibition, Greases, Oils, Lubricant additives.

Cronsioe, Daniel.
LIQUID FUEL FOR COMBUSTION ENGINES. [1963] 3p
Order from OTS or SLA $1.10 63-18657

Trans. of Danish patent 21,091, 20 Mar 16, cl. 23, granted 6 Mar 16, protected from 30 Oct 14 (Priority: Sweden, 2 Jun 14).

DESCRIPTORS: *Fuels, Internal combustion engines, Alcohols, Benzenes, Nitrophenols, Nitrates, Aliphatic compounds, Naphthalenes, Dyes, Mixtures.

Glocker, R.
IMPROVEMENT OF THE LUBRICATING PROPERTIES OF OILS BY THE USE OF ADDITIVES. [1963] [16]p. 5 refs.
Order from SLA $1.60 63-16822

Trans. of mono. [issued by] Institut für Metallphysik am Kaiser Wilhelm Institut für Metallforschung, Stuttgart, 20 Jan 45.

DESCRIPTORS: *Lubricant additives, Lubricants, Oils, Phenyl radicals, Chlorides, Phosphines, Phosphates, Cresyl radicals, Sulfur.

Gurevich, I. L. and Belousova, I. S.
DETERMINATION OF THE NUMBER OF STEPS IN EXTRACTION OF LUBRICATING OILS WITH SELECTIVE SOLVENTS. [1961] 4p. 5 refs.
Order from OTS or SLA $1.10 62-10891

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 123-128.
Also available from OTS or SLA $2.60 in 61-20402 [1961] 24p.

DESCRIPTORS: *Lubricants, *Oils, *Solvent extraction, Solvents, Naphthenes, Distillation.

Heinze, R., Marder, M., and Veidt, M.
IGNITION ACCELERATORS FOR DIESEL FUELS. [1963] [28]p. 39 refs.
Order from SLA $2.60 63-16043

Trans. of [Oel und Kohle (Germany) 1941, v. 37, p. 422-430].

DESCRIPTORS: *Fuel additives, *Fuel oils, *Ignition, Nitrates, Ethyl radicals, Pentyl radicals, Nitrites, Ethylenes, Chlorides, Peroxides, Benzoyl radicals, Nitroso radicals, Methyl radicals, Urethanes, Anilines, Toluenes, Sulfides, Acetones, Cyclohexanones, Oximes, Acetyl radicals, Lead compounds, Copper compounds, Stearates, Butanes, Bromides, Pentenes, Terpenes.

Isagulyants, V. I. and Bogush, O. F.
ISOLATION OF PARAFLOW FROM ITS REACTION MIXTURE. [1961] 3p. 4 refs.
Order from OTS or SLA $1.10 62-10895

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 239-243.
Also available from OTS or SLA $2.60 in 61-20402 [1961] 24p.

DESCRIPTORS: *Naphthalenes, *Waxes, *Oils, *Alkyl radicals, Solvent extraction, Mixtures, Distillation, Acetone, Density, Solubility.

Kaneko, Yoshihisa.
EFFECT OF WALL OF CONTAINER; NEGATIVE CATALYZER IN HOMOGENEOUS SYSTEM; ANALYSIS OF PRODUCTS: ABSTRACTS. Pts. 1-3 of Oxidation of Hydrocarbons at Low Temperature. [1963] 2p.
Order from SLA $1.10 63-18244

Abstract trans. of [Nihon Kagaku Zasshi] (Japan) 1944, v. 65, p. 523-526, 616-620, 755-768.

DESCRIPTORS: *Fuels, Hydrocarbons, Oxidation, *Cumbustion, Explosions, *Fuel additives, Catalysts, Abstracts.

Kröger, Carl and Bürger, Helmut.
THE PHYSICO-CHEMICAL PROPERTIES OF THE STRUCTURAL CONSTITUENTS OF COAL. X. AUTO-OXIDATION AND CHEMICAL CONSTITUTION [1959] [26]p. 30 refs.
Order from SLA $2.60 62-14365

Trans. of Brennstoff-Chemie (West Germany) 1959, v. 40, no. 3, p. 76-85.

DESCRIPTORS: *Coal, *Oxidation, *Chemical analysis.

For abstract see Technical Translations 3: 286, 1960.

Makovetskii, P. S.
AN ACCELERATED MACROMETHOD FOR DETERMINING CARBON AND HYDROGEN IN ORGANIC SUBSTANCES. [1963] [4]p.
Order from OTS or SLA $1.10 63-18698

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1960, v. 5 [no. 11] p. 70-72.

DESCRIPTORS: *Carbon, *Hydrogen, Chemical analysis, Laboratory equipment, Test methods, Acceleration, *Fuels, *Combustion, Organic materials, Organic compounds.

An accelerated macromethod is presented for the determination of carbon and hydrogen in organic substances with a redesigned quartz reaction tube with porous quartz partitions. The presence of porous quartz partitions allows carrying out faster combustion (30 min.) of any liquid and low boiling materials (even by inexperienced operators) with satisfactory results. The method may be used successfully for the determination of carbon and hydrogen in organic substances in plant laboratories. (Author)

Max, Nicolaas.
A METHOD FOR MANUFACTURING MOTOR FUELS WITH A HIGH ANTI-KNOCK QUALITY. [1963] 3p
Order from OTS or SLA $1.10 63-18659

Trans. of Dutch patent 43,899, issued 15 Sep 38, dated 4 Aug 38, cl. 23b. 4a., appl. no. 77,497 of 21 Apr 36, pub. 15 Nov 37, by N. V. de Bataafsche Petroleum Maatschappij.

DESCRIPTORS: *Fuels, Internal combustion engines, *Antiknock, Fuel additives, Metallic compounds, Iron compounds, Cobalt compounds, Nitrogen compounds, Carbonyl radicals, Hydrocarbons, Sulfur compounds, Selenium compounds, Tellurium compounds, Gasoline

Spengler, Günter and Wunsch, Fritz.
ON THE SYNTHESIS OF SOME ADAMANTANE DERIVATIVES, IN PARTICULAR THE 1-ADAMANTANECARBOXYLIC ACID ESTERS, AND THEIR SUITABILITY AS LUBRICATING OILS. [1963] 20p 40refs
Order from SLA $1.60 63-20075

Trans. of Erdöl und Kohle-Erdgas-Petrochemie (West Germany) 1962, v. 15 [no. 9] p. 702-707.

DESCRIPTORS: *Cycloalkanes, *Carboxylic acids, *Esters, Synthesis (Chemistry), Alkyl radicals, Butyl radicals, Hexyl radical, Viscosity, *Lubricants, Oils, Chemical properties.

The preparation of some 1-n-alkyl adamantanes and some 1-adamantanecarboxylic esters is reported. The esters were tested for their suitability as lubricating oils. Although it was found that the low temperature properties (melting or cloud points range from -60 to -30°C) and the thermal stability may be considered good, the resistance to oxidation in the presence of metals is poor. In the presence of radicals, the esters proved to be fairly stable. At low gliding velocities (measured with the Tannert-Wieland "Gliding Indicator"), "stick-slip" vibrations appear already at low loads. The poor load-carrying capacity (Almen-Wieland Machine) was considerably improved on addition of a small amount of oleic acid. Corrosive lubrication (Shell Four-Ball Apparatus) does not occur. (Author)

Velikovskii, D. S. and Lukashevich, I. P.
NEW METHODS OF EVALUATION OF THE PHYSICAL AND CHEMICAL PROPERTIES OF LUBRICATING GREASES. [1961] 6p. 11 refs.
Order from OTS or SLA $1.10 62-10897

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 259-270.
Also available from OTS or SLA $2.60 in 61-20402 [1961] 24p.

DESCRIPTORS: *Greases, *Lubrication, Chemical analysis, Petroleum, Mechanical properties, Colloids, Stability

The present work briefly describes a series of new factors designed to characterize the performance of a grease and the methods of their determination.

Zwergel, A. and Umstätter, H.
DOPES AND ADDITIVES (A SURVEY). [1963] 30p (formula omitted) 97refs
Order from SLA $2.60 63-18663

Trans. of [Erdöl und Kohle-Erdgas-Petrochemie] (West Germany) 1952, v. 5, no. 3, p. 177-180; no. 4, p. 237-240.

DESCRIPTORS: *Fuel additives, *Lubricant additives, Antioxidants, Buffers, Antiknock, Cleaning compounds, Wear resistance, Inhibition, Crystallization, Viscosity, Polymerization, Elasticity, Plasticity.

Topics include: inhibitors; activators; anti-knock agents; heavy-duty additives; extreme pressure additives; crystallization inhibitors; viscosity-index improvers; and Rheologically active additives.

Leather and Textiles

IMPROVEMENTS RELATING TO A PROCESS FOR MAKING NATURAL OR ARTIFICIAL FABRICS OR FIBRES IMPERVIOUS TO LIQUIDS LIKE WATER BUT PERMEABLE TO GASES LIKE AIR. [1963] 4p
Order from OTS or SLA $1.10 63-18636

Trans. of French patent 1,019,596, 23 Jan 53, by Soc. Agr. Indust. Lomb.

DESCRIPTORS: *Fibers (Synthetic), *Fibers (Natural), Textiles, Moistureproofing, Permeability, Gases, Air, Manufacturing methods.

NEW FINISHING COMPOSITIONS FOR TEXTILE FIBRES. [1963] 12p.
Order from OTS or SLA $1.60 63-18648

Trans. of French patent 1,276,531, 9 Oct 61.

DESCRIPTORS: *Fibers (Synthetic), Textiles, *Moistureproofing, *Lubrication, Filaments, Nylon, Static electricity, Friction, Reduction, Organic coatings.

POLYNOSIC FIBERS. V. CRYSTALLINITY AND ACCESSIBILITY OF POLYNOSIC FIBERS. [1963] [33]p. 31 refs.
Order from SLA $3.60 63-18296

Trans. of Inst[itut] Textile de France. Bull[etin] 1962, no. 102, p. 945-962.

DESCRIPTORS: *Fibers (Synthetic), *Cellulosic plastics, Rayon fibers, *Cellulose, Viscose, Crystal structure, Crystal lattices, Transformations, Mechanical properties, Chemical analysis.

It is shown that polynosic fibers are characterized by a clearly more organized structure than the classical viscose fibers and that this structure imparts them an excellent resistance to alkali. (Author)

THE REACTION OF ACRYLONITRILE WITH CELLULOSE. [1963] 4p
Order from OTS or SLA $1.10 63-20047

Trans. of French patent 1,047,261 [1953].

DESCRIPTORS: *Cellulose, *Rayon fibers, *Acrylonitrile polymers, Cyano radicals, Ethyl radicals, Cotton textiles.

The invention concerns the reaction of acrylonitrile with cellulose and presents a well-defined process for the reaction on fibrous cellulose, as in yarns, fabrics, etc., such that an improvement in heat and mildew-resistance is achieved. The invention concerns the reaction of acrylonitrile with cellulose under such conditions that the cyanoethyl group ($-CH_2-CH_2-CH$) reacts with a relatively small proportion of cellulose to produce cyanoethyl-cellulose (Cellulose - $O-CH_2-CH_2-CN$). (Author)

Cichowski, Z[bigniew].
DECOMPOSITION OF XANTHATES IN PRESENCE OF Zn-IONS (Zur Frage der Zersetzung von Xanthogenaten bei Anwesenheit von Zn-Ionen). Presented at the Synthetic Fibers Symposium in Weimar 29 Mar 62. [11 Mar 63] [13]p. 16 refs.
Order from SLA $1.60 63-18338

Trans. of Faserforsch[ung] und Textiltech[nik] (East Germany) 1962, v. 13, no. 9, p. 393-396.

DESCRIPTORS: *Fibers (Synthetic), *Rayon, *Viscose, *Cellulose, Ethyl radicals, Sucrose, *Xanthic acids, Decomposition, *Zinc, Ions.

The retarding influence of Zn-ions on the decomposition of ethyl and saccharose xanthic acid in homogeneous solutions was investigated. On the basis of the data it was concluded that weakly dissociated stable xanthates are formed in the acid medium, which are in equilibrium with the Zn-ions. A similar influence of Zn-ions on the decomposition of cellulose xanthic acid in the gel state and also under the conditions of fiber formation was observed. It can be concluded that the reaction of Zn-ions with cellulose xanthate is extended over the full cross section of the resulting fibers, while the cellulose xanthic acid enters in a concentration-dependent equilibrium with the Zn-ions. (Author)

Gel'perin, N. L. and Krokhin, N. G.
FLOW OF VISCOUS LIQUIDS FROM SMALL SPINNING HOLES (SPINNERET). [21 May 63] [20]p. 14 refs.
Order from OTS or SLA $1.60 63-18280

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 2, p. 40-46.

DESCRIPTORS: Textile industry, *Viscose, *Cellulose acetates, Liquids, Solutions, *Fibers (Synthetic), Fluid flow, Water, Minerals.

The behavior of viscose and cellulose acetate solutions used for producing synthetic fibers, which are spun by the flow of these solutions through spinnerets, was investigated. In order to compare the experimental data, the flow of water and mineral oil through the same spinneret was also investigated.

Glikman, L. Sh.
CONCERNING A DISPUTE ON THE THEORY OF PLIED FIBROUS MATERIALS (O Spornom Voprose Teorii Krucheniya Voloknistykh Materialov). Mar 62 [6]p. 8 refs. RTS 2047.
Order from OTS or SLA $1.10 62-24304

Trans. of Tekstil'naya Promyshlennost' (USSR) 1961, v. 21, no. 5, p. 33-35.

DESCRIPTORS: Cotton textiles, *Fibers, Mechanical properties, Stresses, Distribution.

For multi-layer plied yarns the core structure, with transition of elements from layer to layer, is characteristic. Despite this, the tension along the entire length of single elements is not equalised, and the tension between regions of elements of different layers is distributed in the same way as in the case of the ideal layer structure. Non-uniform distribution of tension between elements of different layers causes a decrease in strength utilisation of single elements as twist and the number of plies increase. This must be taken into account in formulae when estimating the strength of cotton ply yarns of core structure and single yarns from artificial and synthetic fibers. (Author)

Gröbe, A., Maron, R. and others.
CONSTRUCTION AND TESTING OF A LABORATORY SPINNING APPARATUS FOR THE PREPARATION OF VISCOSE FILAMENTS (Aufbau und Erprobung einer Laborspinnapparatur zur Herstellung von Viskosekapillarfäden). [7 Mar 63] [19]p. 5 refs.
Order from SLA $1.60 63-18336

Trans. of Faserforsch[ung] u[nd] Textiltech[nik] (East Germany) 1962, v. 13, no. 6, p. 264-269.

DESCRIPTORS: *Filaments, *Viscose, Preparation, Laboratory equipment, Construction, Test facilities, Textile industry, *Fibers (Synthetic).

Gröbe, V. and Meyer, K.
INFLUENCE OF PRECIPITANT ON FIBER FORMATION IN THE WET SPINNING OF POLYACRYLONITRILE (Untersuchungen über den Einfluss des Fällmittels auf die Fadenbildung beim Nassspinnen von Polyacrylnitril). Rept. 23 on Acrylic Fibers. [11 Feb 63] [28]p. 9 refs.
Order from SLA $2.60 63-18345

Trans. of Faserforschung und Textiltechnik (East Germany) 1959, v. 10, no. 5, p. 214-224.
Another trans. is available from ATS $21.65 as ATS-69L33G [1959] 16p.

DESCRIPTORS: *Fibers (Synthetic), *Acrylonitriles, Polymers, Chemical precipitation, Mechanical properties, *Spinning, Moisture.

Guthke, Hertel, and Erdmann.
LIGHT-STABLE CONDENSATION PRODUCTS WITH TANNING OR DISPERSING PROPERTIES AND PROCESS FOR THEIR PREPARATION. [1963] 5p. 2 refs.
Order from OTS or SLA $1.10 63-18647

Trans. of French patent 1,266,511, issued 5 June 61, by Bad[ische] Anil[in]- und Soda- Fabrik, A. G. (West Germany).

DESCRIPTORS: *Leather, *Tannic acids, *Dyes, Phenols, Sulfonates, Urea, Formaldehyde, Condensation reactions.

Jacquemart, J.
POLYNOSIC FIBERS. VI. OPTICAL ANISOTROPY OF CELLULOSTIC FIBERS. [9 Apr 63] [18]p. (figs. omitted) 10 refs.
Order from SLA $1.60 63-18361

Trans. of Inst[itut] Textile de France. Bull[etin] 1962, no. 102, p. 963-975.

DESCRIPTORS: *Cellulose, *Fibers (Synthetic), *Rayon, *Viscose, *Fibers (Natural), *Cotton textiles, Optical properties, *Anisotropy, Refractive index, Sodium compounds, Hydroxides.

On the basis of the known optical characteristics of cellulose fibers, the material can be classified. The measurement of birefringence taking into account the internal structural transformations which are produced by certain treatments show clearly the special properties of each of the different cellulose fiber groups

according to the nature of the mode of preparation. Thus, the natural fibers have a very high birefringence, the value of which remains unchanged during a moderate treatment with a sodium hydroxide solution. This property is common to polynosic fibers whose birefringence values are however not so high and which form a group whose properties are intermediate between those of mercerized natural fibers and those of classical viscose. Finally, this stability of birefringence of polynosic fibers toward sodium hydroxide treatment permits to oppose this group to that of the "high-tenacity" fibers, which also have a high birefringence, but which are especially susceptible to the treatment effected with a 6% sodium hydroxide solution. (Author)

Kargin, V. A., Sogolova, T. I., and Metel'skaya, T. K.
THE EFFECT OF ANISODIAMETRIC FILLER PARTICLES ON THE PROPERTIES OF POLYMERS, I. [1963] [9p] 8refs
Order from OTS or SLA $1.10 63-20065

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4 [no. 4] p. 601-604.

DESCRIPTORS: *Fibers (Synthetic), *Dacron, *Polyester plastics, *Polyethylene plastics, *Butenes, *Fillers, Physical properties, Particle size.

As a result of the investigations it became evident that the addition of anisodiametric particles to the polymer in the absence of chemical reactions, has an important effect on the mechanical properties of the polymer even at relatively low filler concentrations. It is safe to say that the increase in the strength, modulus 50, and flow temperature of filler systems is related to the shape and size of the added particles. The conditions under which the experiments were conducted made it possible to determine the effect of the shape of filler particles on the physical and mechanical properties of the pure polymer. It is suggested that the lowering of the flow temperature observed upon the addition of relatively low concentrations of filler having lengths not exceeding 100μ, is caused by the effect of such fillers on secondary structures in the amorphous polymer. (Author)

Kostrov, Yu. A.
NEW TYPES OF CELLULOSE ACETATE STAPLE FIBER. [1963] 7p. 12 refs.
Order from OTS or SLA $1.10 63-13279

Trans. of Khim[icheskie] Volokna (USSR) 1962, no. 4, p. 1-3.

DESCRIPTORS: *Fibers (Synthetic), *Cellulose acetates, Hydrates, Acetylation, Physical properties, Mechanical properties.

Neuwirth, H.
TESTING THE WATER ABSORPTION OF TEXTILES BY THE PFERSEE IMMERSION METHOD (Prüfung der Wasseraufnahme von Textilien nach der Tauchmethode Pfersee). [23 Apr 63] [10]p. 1 ref.
Order from SLA $1.10 63-18374

Trans. of Melliand Textilberichte (West Germany) 1960, v. 41, no. 5, p. 611-613.

DESCRIPTORS: *Textiles, Absorption, Water, Test methods, Impregnation, Moistureproofing, Thermosetting plastics, Quality control

The "Pfersee" Spray System based on Dr. Bundesmann's principle cannot be used for testing the water absorption of textiles in all forms. A dip method has been devised which permits precise determination of the water absorption of loose fibre, yarns, knitgoods and felts as well as fabrics. (Author)

Nikolaeva, N. S., Mogilevskii, E. M., and Lin'kova, Z. K.
MEASUREMENT OF THE DEGREE OF POLYMERIZATION OF CELLULOSE FROM THE SPECIFIC VISCOSITY OF ITS SOLUTION IN AN ORGANIC BASE. [1963] 7p. 6 refs.
Order from OTS or SLA $1.10 63-18438

Trans. of Tekstil['naya] Prom[yshlennost'] (USSR) 1958, v. 18, no. 4, p. 9-11.

DESCRIPTORS: *Cellulose, *Polymerization, Viscosity, Rayon, Organic solvents, Measurement, Mathematical analysis.

The specific viscosity of cellulose may be determined in an aqueous solution of organic base without an inert gas atmosphere. For cellulose in triethylbenzylammonium hydroxide, there was obtained $5.7.10^{-4}$ for the constant K_m, which enables us to use the specific viscosity measured in this solution to calculate the degree of polymerization from Staudinger's equation. (Author)

Orthner and Reuter.
PROCESS FOR WATERPROOFING FIBROUS MATERIALS. [1963] 12p 3refs
Order from OTS or SLA $1.60 63-20036

Trans. of German patent application F 8,783, IV c/8k, cl. 8 k gr. 3, appl. 9 Apr 52, pub. 12 Jan 55, by Farbwerke Hoechst A.G.

DESCRIPTORS: *Textiles, *Moistureproofing, Fibers, Materials.

The invention concerns a process for waterrepelling fibres, distinguished by the fact, that the latter are treated with solutions of reaction products of one mol aluminum alcoholate with 0.2-2.5 mols, preferably 0.3-0.8 mols high molecular weight carboxylic acid and solid or semi-solid paraffin hydrocarbons in anhydrous solvents and then dried. (Author)

Orthner and Reuter.
PROCESS FOR WATERPROOFING FIBROUS MATERIALS. [1963] 3p 3refs
Order from OTS or SLA $1.10 63-20038

Trans. of German patent application F 9,447, IV c/8k, cl. 8 k, gr. 3, appl. 8 Jul 52, pub. 30 May 56, by Farbwerke Hoechst A.G.

DESCRIPTORS: *Textiles, *Moistureproofing, Fibers, Materials.

The invention relates to a modification of the process for waterproofing fibres according to Application F 8783 IV c/8k, distinguished by the fact, that the latter are treated with solutions of dispersions of reaction products of one mol aluminum alcoholate with 0.2-2.5 mols, and preferably 0.3-0.8 mol high molecular weight carboxylic acids in anhydrous, organic solvents, dried and subjected to a heat treatment. (Author) (For F 8783 IV c/8k see 63-20036)

Parisot, A.
THE INDEX OF THE DEGREE OF POLYMERIZATION AN INDUSTRIAL PARAMETER FOR CELLULOSE. Report presented at the International Congress of Industrial Chemistry (no. 28) Bordeaux, Oct 62. [28 Mar 63] [36]p. 17 refs.
Order from SLA $3.60 63-18278

Trans. of Teintex (France) 1962, v. 27, no. 8, p. 535-553.

DESCRIPTORS: *Fibers, *Cellulose, Standards, *Quality control, Polymerization, Test methods, Viscosity, Errors, Microanalysis, Degradation, Mechanical properties, Tensile properties, Wear resistance.

Philipp, B. and Müller, K.
MODE OF OPERATION OF VISCOSE ADDITIVES. PT. II. BEHAVIOR OF VISCOSE BYPRODUCTS SODIUM TRITHIOCARBONATE AND SODIUM SULFIDE AGAINST ADDITIVES (Chemische Untersuchungen zur Wirkungsweise von Viskosemodifikatoren, Teil II). [22 Mar 63] [26]p. 15 refs.
Order from SLA $2.60 63-18341

Trans. of Faserforschung und Textiltechnik (East Germany) 1962, v. 13, no. 9, p. 385-392.

DESCRIPTORS: *Rayon, *Viscose, Additives, *Sodium compounds, Thio radicals, *Carbonates, *Sulfides, *Ethylenes, Glycols, *Amines, *Zinc compounds.

Investigations were aimed at clarifying the question, whether and to which extent the reaction between the viscose by-products, trithiocarbonate and sulfide, and the zinc ions of the acid coagulating bath is influenced and how this influence can be explained, if necessary. A number of polyethylene oxide compounds were used as modifiers, pure polyethylene glycols as well as different polyethylene oxide adducts of fatty acids, alcohols and amines. For comparison, a series of low-molecular weight amines, such as mono- di- and trimethyl amines, the homologous ethyl amines, tetramethyl and tetraethyl ammonium hydroxide, cyclohexyl amine, as well as the N-methyl and N-N-dimethyl derivatives thereof were also used. In this manner, it could also be tested, whether for primary and secondary amines, a "chemical modifying action" can be considered only through a dithiocarbaminate formation or also through a precipitation effect by a reaction between by-products and zinc-ions.

Popp, P.
METHOD OF WASTE WATER PURIFICATION FOR THE PRODUCTION OF SUPERCORD RAYON. (Verfahren zur Abwasserklärung bei der Herstellung von Supercordseide). [3 May 63] [29]p. 5 refs.
Order from SLA $2.60 63-18432

Trans. of Faserforschung und Textiltechnik (East Germany) 1962, v. 13, no. 10, p. 642-472.

DESCRIPTORS: *Rayon, Cordage, Production, *Water supplies, *Wastes (Industrial), Purification, Decontamination, Sewage, Disposal, *Sanitary engineering, Water filters, Filters (Fluid), *Spinning, Viscose

Sych, G. and Reichel, C.
WATER SORPTION BY GRANULATED POLYETHYLENE GLYCOL TEREPHTHALATE AND ITS INFLUENCE ON MELT STABILITY (Uber die Wassersorption an Granuliertem Polyäthylenglykolterephthalat und ihren Einfluss auf die Schmelzstabilität). [14 May 63] [17]p. 23 refs.
Order from SLA $1.60 63-18275

Trans. of Faserforschung und Textiltechnik (East Germany) 1962, v. 13, no. 6, p. 256-261.

DESCRIPTORS: *Fibers (Synthetic), *Polyester plastics, *Ethylenes, *Glycols, *Phthalates, Particles, Water, *Moisture, *Sorption, Melting, Stability, Dehydration.

Two methods for determining the water content of granulated polyethylene terephthalate were investigated. The most reliable moisture content values can be obtained from the weight difference after drying the polycondensate samples. The Karl-Fischer method is here not suitable for the determination of moisture content. From the increase in weight of dried granulated polyethylene terephthalate, the moisture sorption at 22°C. ± 2, and different relative humidities (3, 5, 20, 40 and 65%) as well as the maximum moisture content were determined under the given conditions from industrial aspects. Experiments on granulated samples of different particle size show different water sorptivity. Therefrom, the following conclusions were drawn for industrial practice. Experiments on the influence of water content in polymers on their melt stability under the same conditions (temperature, melting time, catalyst combination) showed that polyethylene terephthalate is very sensitive toward water. From the decrease in viscosity found it can be concluded that a granulated polyethylene glycol terephthalate which has a moisture content above 0.1% is no longer suitable for producing high-grade fibers, if a previous drying is omitted. (Author)

Treiber, Erich E.
CHARACTERIZATION OF VISCOSE SOLUTIONS: DETERMINATION OF GEL PARTICLES IN VISCOSE. [10 Apr 63] [23]p. 38 refs.
Order from SLA $2.60 63-18373

Trans. of Svensk Pappers-tidn[ing] 1958, v. 16, no. 18B, p. 794-802.
A partial trans. (p. 798-802) is available from SLA mi$1.80, ph$1.80 as 59-15050 [1959] [9]p.

DESCRIPTORS: *Fibers (Synthetic), *Rayon, *Viscose, Solutions, Quality control, *Gels, Determination, Microscopy, Photographic analysis, Phototubes.

After a survey of physico-chemical methods for the characterization of a viscose, the now know methods for making gel particles visible and recording them are described. The boryniec-Kiessig method for gel particle counting is discussed in detail. (Author)

Voitelev, U. V. and Katorzhkov, N. D.
DETERMINATION OF AMOUNT OF THE HETERO-CHAIN FIBERS IN MIXTURE. [29 May 63] 11p. 16 refs.
Order from OTS or SLA $1.60 63-18377

Trans. of Tekstil['naya] Prom[yshlennost'] (USSR) 1962, v. 22, no. 11, p. 72-77.

DESCRIPTORS: *Fibers (Synthetic), *Nylon, *Dacron, *Polyamide plastics, *Polyester plastics, Fibers, Mixtures, Quantitative analysis, Solvents.

Weide, W[erner] and Reuseh, K[arl].
THREAD TENSION IN THE RING SPINNING FRAME WITH CONSIDERATION FOR THE USE OF VARIABLE-SPEED MOTORS FOR SPINNING, PT. 1. [1963] 20p. figs. omitted) 3 refs.
Order from SLA $1.60 63-18493

Trans. of Deutsche Textiltechnik (East Germany) 1957, v. 7, no. 10, p. 543-547.
Another trans. is available from SLA $1.60 as 61-14503, 25 Sep 58, 11p.

DESCRIPTORS: *Textile industry, *Machines, *Fibers Processing, Stresses, *Variable speed drives, Tensile properties, Industrial research, Rupture, Mathematical analysis, *Spinning.

Beside an exhausting description of the thread tension and of its components, detailed mathematical proof is offered, all of which is to culminate in practical experiments with ring spinning frames; specially devised for this purpose. (Author)

Paints and Finishes

IMPROVEMENTS IN SYNTHETIC RESINS AND PROCESSES FOR THEIR PREPARATION. [1963] 12p. (table figs. omitted).
Order from OTS or SLA $1.60 63-18629

Trans. of French patent 928,732, 5 Dec 47, by Pittsburgh Plate Glass.

DESCRIPTORS: *Plastics, Synthesis (Chemistry), *Cyclopentadiene, *Linseed oil, Catalysts, Copolymerization, Polymers, Fish oils, Soybean oil, Varnishes

SYNTHETIC RESINS AND PROCESS FOR THEIR PREPARATION. [1963] 7p.
Order from OTS or SLA $1.10 63-18632

Trans. of French patent 956,583, 15 Aug 49, by I. G. F[arbenindustrie A. G.].

DESCRIPTORS: *Plastics, Synthesis (Chemistry), Polymers, Carboxylic acids, Alcohols, Benzenes, Films, Varnishes.

Acters, Wilhelm.
PROCEDURE FOR THE PRODUCTION OF COATINGS OF HIGH REFLECTIVE POWER ON SURFACES OR BODIES, PARTICULARLY THE PRODUCTION OF THE PANELS AND OF THE TRAFFIC SIGNS. [1962] 4p.
Order from OTS or SLA $1.10 62-16419

Trans. of French patent 1049818, gr. 7, cl. 2, appl. 24 Jan 52, issued 26 Aug 53, pub. 4 Jan 54.

DESCRIPTORS: Fluorescence, Paints, Reflection, *Finishes and finishing, Production.

Eian, K.
PACKAGING LACQUERS AND ALUMINIUM TUBES. Sep 63.
Order from MT $19.35 MT Trans-329

Trans. of Tidsskrift for Hermetikindustri (Norway) 1962, v. 48, no. 9, p. 394-402.

DESCRIPTORS: *Varnishes, Food, *Containers, Packing materials, Films, *Aluminum tubing.

Wandser, B.
THE DECLINE IN STRENGTH OF NEWLY SET PLASTER OF PARIS. [1963] 4p. (figs. [refs.] omitted).
Order from SLA $1.10 63-18257

Trans. of Zement-Kalk-Gips (West Germany) 1962, v. 15, no. 10, p. 437-438.

DESCRIPTORS: *Gypsum, *Coatings, Aging, *Crystallization, Dehydration, Tensile properties

Photographic Materials

Blyumberg, I. B. and Davydkin, I. M.
MECHANISM OF PENETRATION OF COMPONENTS OF PROCESSING SOLUTIONS INTO PHOTOGRAPHIC EMULSION. [1963] 20p. 13 refs.
Order from OTS or SLA $1.60 63-18779

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 1, p. 3-10.

DESCRIPTORS: *Photographic emulsions, Diffusion, Physical chemistry, Solutions, Photographic chemicals, Chemical equilibrium.

It was shown that the mechanism of penetration of components of processing solutions into photographic emulsion can be regarded as a diffusion process. The

combination of diffusing compounds with the emulsion layer and their distribution between the emulsion layer and the solution was examined. (Author)

Conix, A. J. and Cassiers, P. M.
ELEKTROTHERM. [1962] 16p.
Order from OTS or SLA $1.60 62-20403

Trans. of French patent 1,288,059, appl. no. 845,922, filed 5 Dec 60, gr. 12 Feb 62 (British priority no. 41,351/1959, 4 Dec 59) by Gevaert Photo Producten N. V., Belgium (pub. in Bull[etin] Off[iciel de la Propriété Industrielle (France) 1962, no. 12).

DESCRIPTORS: *Electrophotography, Photographic images, Photographic chemicals.

The invention has for its purpose a method for obtaining an electrostatic latent image of an object, from which it is possible to obtain a visible reproduction, characterized in that one applies an electrical charge to an electrothermographic material containing an electroconductive dorsal element and an electrothermographic element, this electrothermographic element consisting essentially of a compound whose specific resistivity decreases in an intermittent manner by decreasing the temperature, and in that this electrothermographic material is placed in close contact with an original which has a pattern that absorbs the portions of radiant energy strongly, and that one exposes this electrothermographic material simultaneously with this original to an intense radiation. (Author)

Grechko, M. K.
EFFECT OF POTASSIUM THIOCYANATE ON THE FORMATION OF VARIOUS J STATES IN A MESO-ETHYLTHIACARBOCYANINE ETHYLATE ADSORPTION LAYER. [1963] 5p. 8 refs.
Order from OTS or SLA $1.10 63-18729

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 2, p. 137-139.

DESCRIPTORS: *Photographic emulsions, *Silver compounds, Halides, Absorption spectrum, Sensitivity, *Potassium compounds, *Thiocyanates, *Dyes, *Thiocyanines, Ethyl radicals, *Polymerization.

The experimental results show that the formation of tow J states in the meso-ethylthiocarbocyanine ethylate adsorption layer, which leads to an appreciable increase in the emulsion speed exposed through a red filter is caused by the presence of a definite amount of thiocyanate in the emulsion. The indicated property of the latter exists in the case of all investigated emulsions which have not been finished (chemically ripened).

Ikeda, Tomoaki, Murakami, Takashi and others.
CONCERNING IMAGE FORMATION IN ELECTROPHOTOGRAPHY. REPT. II. REDUCTION AND FOG REMOVAL BY CARRIER BRUSH. [1963] [13]p. (foreign text included).
Order from SLA $1.60 63-18321

Trans. of Denshi Shashin (Japan) 1961, v. 3, no. 3, p. 55-58.
Another trans. is available from ATS $10.75 as ATS-52P62J [1962] 6p.

DESCRIPTORS: *Electrophotography, Printing, Fog, Reduction, Brushes, Photographic images

In regard to images developed by electrophotography, the fog involved in high-light is likely to have a bad effect on the image quality. In order to remove this fog, methods of reduction and removal of the fog on electrophotography were studied. This method brushes on the developed images with the carrier soon after developing, in the dark. This method was applied not only to continuous tone images, but also to halftone images with good results. This reduction method develops a tendency to cutting reduction and to subtractive reduction when the brushing times are increased. The finer the meshes of the carrier are, the capability of the reduction is increased. Brushing times are increased and so, the reduction effect is advanced. The capability and the effect of reduction are changed when a different carrier is used. These methods are applied practically to halftone images, so the quality of the images is improved remarkably. (Author) (See also 63-18322)

Kartuzhanskii, A. L.
ACTIVATION ENERGY OF THERMAL DECAY OF LATENT IMAGE CENTERS AS A FUNCTION OF THE NUMBER OF ATOMS. [1962] 5p. 4 refs.
Order from OTS or SLA $1.10 62-18586

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1962, v. 7, no. 1, p. 57-58.

DESCRIPTORS: *Photographic images, Heat of activation, *Photographic emulsions.

Kikuchi, Shin-ichi.
IMPRESSIONS OF THE ZURICH INTERNATIONAL PHOTOGRAPHIC CONFERENCE [10-16 SEP 61]. [1963] [11p] (foreign text included)
Order from SLA $1.60 63-18806

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 1, p. 27-30.

DESCRIPTORS: *Conferences, *Photography, Halides, Photosensitivity, Photographic emulsions.

Klein, E.
THE RELATIONS BETWEEN THE BLACKENING AND THE SIZE OF THE DEVELOPED UNITS OF SILVER. [1961] [22]p. 9 refs.
Order from SLA $2.60 62-14093

Trans. of Zeitschrift für Elektrochemie (West Germany) 1958, v. 62, no. 9, p. 993-999.

DESCRIPTORS: *Colors, *Silver, Measurement, *Electron microscopy, Chemical analysis, Colloids, *Photographic emulsions, Particle size.

Levi, S. M., Vilenskii, Yu. B., Kochneva, S. N., Popova, O. V., and Veretenova, T. N.
A DIFFUSION METHOD OF HARDENING EMULSION LAYERS. 29 Mar 63, 14p 11refs
Order from OTS or SLA $1.60 63-18725

Trans. of Zhur[nal] Nauch[noi i] Priklad[noi] Fot[ografii i] Kinemat[ografii] (USSR) 1962, v. 7, no. 3, p. 161-168.

DESCRIPTORS: *Photographic emulsions, *Hardening, Diffusion, Photographic film, Chromium compounds, Acetates, Formaldehyde, Viscosity, Mechanical properties, Photosensitivity.

A determination was made of the maximum hardening of the layer by certain hardeners at which their effect on the photographic properties and viscosity of the emulsion before coating are absent. The system of the diffusion method of hardening emulsion layers was developed and a comparison was made with the usual method of hardening (i.e., the introduction of hardener before coating). (Author)

Lyalikov, K. S., Ginzburg, K. M., and Antipin, A. V.
THE ROLE OF POTASSIUM IODIDE IN THE PROCESS OF FORMATION OF PHOTOGRAPHIC EMULSIONS. I. SILVER IODOBROMIDE NON-AMMONIA EMULSIONS. [1963] [11]p 2refs
Order from OTS or SLA $1.60 63-20261

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 2, p. 101-105.
Another trans. is available from ATS $7.00 as ATS-40Q71R [1963] 6p.

DESCRIPTORS: *Photographic emulsions, *Potassium compounds, *Iodides, Silver compounds, Bromides, Colloids, Solubility, Halides.

An electron microscopic investigation of the effect of potassium iodide at the moment of formation of the solid phase of a non-ammonia silver iodobromide emulsion was carried out. Potassium iodide promotes the formation of a more nonodispersed and fine-grain emulsion. The presence of potassium iodide at the moment of formation of an emulsion increases the number of nuclei (which probably have the composition Ag[Br,I]. The presence of silver iodide in the grain reduces the solubility (or the speed of dissolution) of the emulsion grains. When the solubility of silver halides is increased (KBr 1.6 mole/liter) the curve of distribution of grains according to dimension has two maximums even at the first moment of formation of the emulsion. (Author)

Markevich, N. N.
MAKING ELECTROPHOTOGRAPHIC PAPER OF ENHANCED LIGHT-SENSITIVITY. [1963] [6]p. 18 refs.
Order from OTS or SLA $1.10 63-18597

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 2, p. 135-136.
Another trans. is available from OTS or SLA $1.10 as 63-18730 [1963] 4p.

DESCRIPTORS: *Electrophotography, *Photographic paper, Semiconducting films, Photoconductivity, Photosensitivity, Zinc compounds, Oxides, Binders, Dyes, Cadmium compounds, Sulfides, Selenium compounds.

(For Abstract see 63-18730)

Scheffer, W.
HALATIONS. [1963] 5p. (figs. omitted).
Order from SLA $1.10 63-18297

Trans. of Photographische Korrespondenz (Austria) 1910, no. 601, p. 469ff.

DESCRIPTORS: *Photographic emulsions, *Halation, *Photographic images, Distortion, Light, Scattering.

Sheberstov, V. I.
THE KINETIC LAW OF LOSS OF LIGHT-SENSITIVITY DURING STORAGE OF PANCHROMATIC FILMS. Pt. 4 of a [Study] of the Processes of Aging and Stabilization of Photographic [Materials]. [1963] [14p] 2refs
Order from OTS or SLA $1.60 63-20019

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1962, v. 7, no. 5, p. 341-347.

DESCRIPTORS: *Photographic film, *Photosensitivity, Degradation, Storage, Aging (Materials)

During storage modern panchromatic films lose light-sensitivity according to a scheme of "anomalous aging", i.e. without any significant increase in fog. The light-sensitivity S thereby tends toward a limit S_a, after attainment of which there is possible a further drop in light-sensitivity, now accompanied by an increase in fog. Within the limits of the stage of "anomalous" aging a linear relation is observed:

$$\log (S - S_a) = \log (S_0 - S_a) - 0.43kt,$$

where S is the initial light-sensitivity (at t = 0), k is the aging-speed constant. The constants of the aging-speeds of some panchromatic films are determined. (Author)

Urbach, F.
NEW PHOTOCONDUCTOGRAPHIC METHOD. [1962] [6]p.
Order from OTS or SLA $1.10 62-20012

Trans. of Belgian patent 609,408, filed 20 Oct 61 (Priority: U.S.A., 25 Oct 60) by Kodak, S.A.

DESCRIPTORS: *Electrophotography, *Photoconductivity, Electrical conductance, Photographic emulsions, Photographic chemicals, Photographic images.

The main purpose of the invention is to allow a visual control of the photoconductographic method, which avoids tests of exposure or long calculations. The invention has two essential characteristics: the manner following which the electric current is applied and the manner of using non-actinic illumination to examine the image during development. (Author)

Urbach, F.
NEW REVERSIBLE PHOTOCONDUCTOGRAPHIC PROCESS. [1962] 7p. (figs. omitted).
Order from OTS or SLA $1.10 62-20009

Trans. of Belgian patent 609, 489, filed 23 Oct 61 (Priority: U. S. no. 64, 903, 25 Oct 60) by Kodak, S. A.

DESCRIPTORS: *Electrophotography, *Photoconductivity, *Color photography, Photographic images, Reproduction, Photographic recording media.

The first stage of the process (photographic exposure) can consist of printing by contact, printing by projection or scaning. The second stage of the process, or the stage of desensitization, is carried out by applying a direct current whose polarity is opposite to that usually used for development. The third stage consists of the elimination of the variations of conductivity. The fourth stage which is carried out when the conductivity of the system has been made effectively uniform, is analogous to a usual photographic development, but it produces a direct positive instead of a negative. (Extract)

Urbach, F. and Nail, N. R.
NEW PHOTOCONDUCTOGRAPHIC PROCESS CARRIED OUT DRY. [1962] [9]p.
Order from OTS or SLA $1.10 62-20011

Trans. of Belgian patent 609, 409, filed 20 Oct 61 (Priority: U. S. no. 64, 902, 25 Oct 60) by Kodak, S. A.

DESCRIPTORS: *Electrophotography, *Photoconductivity, *Photographic processors.

According to the invention, close electric contact is carried out between the dry electrolyte and the photoconductor with the help of an electroconductive material, applied by pressure between the silver halides and the photoconductor at a thickness of less than three microns and having an optic density by transmission of less than 0. 3. (Author)

Yanushyavichene, Yu. A.
EFFECT OF SOME CHEMICALS ON PHOTODICHROISM. [1963] 13p 6refs
Order from OTS or SLA $1.60 63-18727

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1962, v. 7, no. 1, p. 20-25.

DESCRIPTORS: Photographic film, *Photographic emulsions, Photographic chemicals, *Photosensitivity, *Photochemistry, Potassium compounds, Nitrites, Sodium compounds, Sulfites, Phosphates, Cyanides, Iron compounds, Chromates, Manganates, Dyes, *Dichroism

The effect of solutions of KNO_2, K_2SO_3, NaH_2PO_2, $FeSO_4$, $K_4Fe(CN)_6$ $K3Fe(CN)_6$, K_2CrO_4, $K_2Cr_2O_7$, $KMnO_4$, metol, hydroquinone and crystal violet, pinaverdol, cyanine, and phenosafranine dyes on photodichroism excited in gelatin-silver salt films, prepared with an excess of silver or chloride ions was investigated.

IMPROVEMENTS IN VINYL RESINS. [1963] 13p 10refs
Order from OTS or SLA $1.60 63-20028

Trans. of French patent 1, 300, 501, appl. 14 Sep 61, issued 25 June 62, by Rosenfelder & Breznak Rosetti Chemicals Inc.

DESCRIPTORS: *Vinyl plastics, Polyvinyl chlorides, Stabilization, Aging (Materials), Halogens, Phosphites, Heterocyclic compounds, Molecular structure, Plastics.

METHOD FOR THE RECOVERY OF WASH-SOLUTIONS FROM THE PURIFICATION OF LOW PRESSURE POLYALKENES. [1963] 3p 1ref
Order from OTS or SLA $1.10 63-20119

Trans. of Dutch patent application 220, 612 of 7 Sep 57, pub. 16 Apr 62, priority dated 25 Sep 56, by Bergwerksgesellschaft Hibernia, A. G., Germany.

DESCRIPTORS: *Polyethylene plastics, *Ziegler catalysts, Purification, Cleaning, *Ammonium, Chemical precipitation.

The invention relates to a method for the recovery of wash solution, which was obtained when cleaning low pressure polyalkenes, and from which the polymer has been separated, characterized in that after the cleaning, the wash-solution is treated with gaseous ammonia and the thereby precipitating catalyst residues are separated from the wash-solution. The treatment is carried out at elevated temperature, however not above boiling temperature of the solvent. (Author)

POLYURETHANE FOAMS, THEIR MANUFACTURE AND APPLICATION. [1963] 17p
Order from OTS or SLA $1.60 63-18643

Trans. of French patent 1, 161, 239, appl. 19 Oct 56, issued 17 Mar 58, by Gen. Tire and Rubber.

DESCRIPTORS: *Foams, *Isocyanate plastics, *Expanded plastics, Manufacturing methods, Polyester plastics.

The invention relates to a process for manufacture of polyurethane foam in which a haloalkane, gaseous at ambient temperature and b. p. not less than -50° at atmospheric pressure, is dispersed in a polyester, the polyester mixed with a diisocyanate and temperature of the mixture allowed to rise during the reaction to a point above the b. p. of the aforesaid gas, thus producing a porous polyurethane foam, due at least in part to expansion of the gas. (Author)

Antropova, N. I., Kuznetsova, I. B. and others.
SURFACE TREATMENT OF PK-4 FILM WITH STABILIZERS. [1963] 7p.
Order from ATS $9.75 ATS-06Q70R

Trans. of Plasticheskie Massy (USSR) 1962, no. 9, p. 61-64.

DESCRIPTORS: *Films, Surfaces, Protective treatments, Stabilization.

Asahara, Teruzo, Yamashita, Kenjiro, and Katayama, Shitomi.
POLYGLYCOLLIDE SYNTHESIS REACTION. Rept. 1 [of] Studies on Aliphatic Polyesters. [1963] 14p 5refs
Order from SLA $1.60 63-18902

Trans. of Kogyo Kagaku Zasshi (Japan) 1963, v. 66, no. 4, p. 485-489.

DESCRIPTORS: *Glycolic acids, Anhydrides, Polymerization, Dehydration, *Chloroacetic acids, Catalysts, Antimony compounds, Oxides, Potassium compounds, Bromides, Reaction kinetics, *Polyester plastics, Synthesis (Chemistry).

The polyglycollide, which is derived from the most simple aliphatic hydroxy acid, glycollic acid, was studied in order to probe raw materials for its production and to determine the reaction velocity and reaction temperature. As raw materials for polyglycollide formation, glycollic acid, monochloroacetic acid, and sodium monochloroacetate were used. Although glycollic acid and sodium monochloroacetate reacted whether a catalyst was present or not, the reaction of monochloroacetic acid did not progress unless a catalyst was present. The dehydration reaction of glycollic acid was an apparent third-order reaction whether when no catalyst was present or when antimony oxide was used. Since although the reaction velocity became greater, the decomposition reaction too became severe when antimony oxide was added, a polymer of higher degree of polymerization was obtained when no catalyst was used. The reaction of monochloroacetic acid using potassium bromide was an apparent second-order reaction. Analyzed values of the reaction velocity for the respective cases were obtained. Although the optimum reaction temperature at normal pressure was 219°C, it was believed that 225 ~ 230°C was desirable, considering the melting point and melt viscosity of the polyglycollide. (Author)

Babin, E. P. and Rosenberg, B. A.
METHOD FOR PRODUCING COUMERONE-INDENE RESINS. [1963] [4p]
Order from OTS or SLA $1.10 63-18851

Trans. of Russian patent 148232, cl. 39s, 20 12, subscript. gr. no. 160, declared 15 Jun 61, under no. 738576/23-5, pub. in #[Byulleten' Izobretenii] (USSR) 1962, no. 12.

DESCRIPTORS: *Indene, *Benzenes, Polymerization, Catalysis, Boron compounds, Fluorides, Synthesis (Chemistry).

A method of obtaining coumerone-indene resins from heavy benzene in the presence of catalyst is described. It assures under a continuous process the polymerization of heavy benzene which is accomplished in the presence of boron fluoride as the catalyst under excess pressure (for example, 1.2-2 atm.). (Author)

Baumann, H.
PROPERTIES OF FOAMED COLD-SETTING UREA-FORMALDEHYDE RESINS. [1963] 16p (figs. tables omitted)
Order from SLA $1.60 63-18526

Trans. of Kunststoffe (West Germany) 1958 [v. 48] no. 8 [p. 362-364] and no. 9 [p. 406-408].

DESCRIPTORS: *Urea-formaldehyde resins, *Amino plastics, *Expanded plastics, Physical properties, Chemical properties, Mechanical properties.

Tests were made on the following properties: shrinkage; resistance to cold, heat, aging, chemicals, vibration, fungi, and other materials; formation of condensation; thermal conductivity; thermal conductivity; water absorption; flammability; sound absorption; and transmittance of rays. The test methods were aimed mainly at requirements which exist in practical use. On the whole, they furnish values which can be reproduced. The tests were confined to "isofoam," a hard porous foam.

Bier, G. and Krämer, H.
CONTRIBUTION TO THE STRUCTURE OF POLYVINYL CHLORIDE. [1963] [19]p. 4 refs.
Order from SLA $1.60 63-18306

Trans. of Makromolekulare Chemie (Switzerland) 1956, v. 18/19, p. 151-165.

DESCRIPTORS: *Polyvinyl chloride, *Molecular structure, Colloids, Viscosity, Molecular weight, Reaction kinetics

Polyvinyl chloride was prepared by the process of emulsion polymerization under various conditions. Polymers in which more extensive branching was anticipated due to the method of preparation, were characterized by the relation, $Z\eta = K_m \cdot M^a$, $a < 1$. Polymers in which less branching was anticipated exhibited a linear relation between $Z\eta$ and M. Fractions of the more extensively branched substance exhibited a higher viscosity than fractions of less branched material for identical molecular weights. This finding is explained on the basis of the fact that the fractions of the more highly branched substances are uniform with respect to the solubility of the macromolecules, but are non-uniform with respect to structure (branching) and molecular weight. (Author)

Bottomley, Anthony.
CELLULAR STRUCTURE DRAWN FILAMENTS AND PROCESS FOR MAKING THEM. [1963] 10p 2refs
Order from OTS or SLA $1.10 63-20066

Trans. of French patent 1,301,035, P. V. no. 869,001, internat'l cl. D 01 d -- D 01 f, filed 25 Jul 61, granted 2 Jul 62, by Phillips Petroleum Co., U.S.A. (pat. appl. 45,716, filed 27 Jul 60, U.S.A.).
Another trans. is available from OTS or SLA $1.10 as 63-18391 [31 Jan 63] [5p].

DESCRIPTORS: *Manufacturing methods, *Filaments, *Polyethylene plastics, Polymers, *Expanded plastics, Drawing (Machine Processing), Foams, Stretch forming.

The present invention has for its objects new and improved filaments from plastics or polymers, filaments which give, by weaving, improved fabrics; a process for preparing these new filaments; and, new filaments from polymers or plastics, filaments which present a higher volume/weight ration than filaments now available. It is possible to form from the polymer or plastic filaments cell structures which posses improved dyeing properties. (Author)

Ciampa, Giuseppe and Schwindt, Hans.
VISCOSIMETRIC WEIGHT DETERMINATION OF POLYVINYL CHLORIDE. [1963] [14]p. 55 refs.
Order from SLA $1.60 63-18305

Trans. of Makromolekulare Chemie (Switzerland) 1956, v. 21, p. 169-178.

DESCRIPTORS: *Polyvinyl chloride, *Molecular weight, Determination, Viscosity, Osmotic pressure, Light, Scattering, Equations.

Different equations are given by various authors to describe the relations between $[\eta]$ and $\overline{M}_n$ and between $[\eta]$ and $\overline{M}_{visc}$ of polyvinyl chloride. Therefore a series of whole polyvinyl chlorides polymerized in suspension was investigated, using cyclohexanone as solvent, and determination was made of $[\eta]$, $\overline{M}_n$ (osmotically) and M_w (by light scattering). The osmotic molecular weights were found to be in good agreement with the equation of Danusso. The light scattering measurements furnished the equation $[\eta] = 1.10 \cdot 10^{-6} \cdot \overline{M}_w$, which is in good agreement with the equation of Fuoss-Mead correlating $[\eta]$ and $\overline{M}_{visc}$. The linear relationship given above is discussed with regard to the behavior of the polyvinyl chloride molecules in solution. (Author)

Danusso, Ferdinando.
ON THE MECHANISM OF THE STEROSPECIFIC POLYMERIZATION AND COPOLYMERIZATION OF AROMATIC VINYL NONOMERS. REPT. II. DISCUSSION OF THE KINETIC AND CHEMICAL MECHANISM. [1963] [37]p. 35 refs.
Order from SLA $3.60 63-18281

Trans. of [la] Chim[ica e l'] Ind[ustria] (Italy) 1962, v. 44 [no. 6] p. 611-620.
Another trans. is available from CTS (Chem) $31.60 as CTS (Chem)-297 subsequent copies $5.25/ea.

DESCRIPTORS: *Styrene plastics, *Vinyl radicals, *Benzene derivatives, *Polymerization, *Copolymerization, Addition reactions, Reaction kinetics, Ions, Stereochemistry, *Ziegler catalysts.

The principal experimental results obtained in an extensive systematic study of the sterospecific polymerization of some thirty aromatic vinyl monomers with Ziegler-Natta catalysts are examined and the kinetic and chemical mechanism of the reaction is discussed. (Author) (See also 62-22281)

Funatsu, Minoru, Ineda, Masami, and Kita, Hisahiro.
THE CATALYTIC PROPERTIES OF TERTIARY AMINES IN THE FORMATION OF POLYURETHANE. [1963] [10p] 16refs
Order from SLA $1.60 63-20062

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 9, p. 1426-1430.

DESCRIPTORS: *Isocyanate plastics, *Amines, *Catalysts, Catalysis, Glycols, Ethylenes, Chemical analysis,

The catalytic properties of various tertiary amines in the formation of polyurethane are discussed from the point of view of the catalytic constant derived from the reaction rate. For the formation of polyurethane, toluene diisocyanate was allowed to react with diethylene glycol, propylene glycol, and polypropylene glycol and water, respectively, at 30°C using benzene as a solvent. The initial concentration of hydroxyl groups and isocyanate groups was adjusted to 0.073 mole/liter and their reaction rates are followed by Siggia's analytical method for isocyanates and the catalytic constants were obtained. The tertiary amines used in this experiment were N-methylmorpholine, N-ethylmorpholine, N,N'-dimethyl-piperazine, N,N-dimethylbenzylamine, N,N-dimethylaurylamine, triethyl amine, triethylene diamine, N,N,N',N'-tetramethyl-ethylene diamine, N,N,N,'N'-tetramethylpropylene diamine, N,N,N,N'-tetramethyl 1,3-butane diamine, N,N,N',N'tetramethylhexamethylene diamine, N,N,N',N'',N''-pentamethyl diethylene triamine, N,N,N',N'',N''',N'''-hexamethyltriethylene-tetramine, and hexamethylenetetramine. It was found that N-polymethylpolyethylene polyamine-type compounds are very effective catalysts for the formation of polyurethane. (Author)

Ghersa, P.
MEASUREMENT OF THE FRICTION COEFFICIENT OF PLASTIC SHEETS. [22 Feb 63] [13]p.
Order from SLA $1.60 63-18392

Trans. of Materie Plastiche (Italy) 1962, v. 28, p. 466-471.

DESCRIPTORS: *Plastic films, *Polyethylene plastics, *Polyester plastics, *Polyvinyl chloride, *Halocarbon plastics, Handling, Packaging, *Friction, Loading (Mechanics), Velocity, Electrostatics.

Gorbunova, Eleonora.
RECENT DEVELOPMENTS IN PRODUCTION OF SILICONE POLYMERS. 19 Sep 63, 4p JPRS: 21147.
Order from OTS $0.50 63-31792

Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 6, p. 4.

DESCRIPTORS: *Silicone plastics, Synthesis (Chemistry), Laboratories, *Polymers, Silicon compounds, Silicones, Chemical industry, Heat resistant plastics, Molecular structure.

Jaeckel, K.
FILMS AND THEIR FORMATION FROM POLYMER LATEX. [1963] [9p] (figs omitted) 20refs
Order from SLA $1.10 63-20064

Trans. of F[ederation d'] A [ssociations de] T [echniciens des] I [ndustries de] P[eintures, Vernis Emaux et Encres d'Imprimerie de l'] E[urope] C[ontinentale. [Comptes Rendus du Congrès] (France) 1962, v. 6, p. 418-423.

DESCRIPTORS: *Plastic films, *Vinyl plastics, *Acetates, *Latex, *Colloids, Polymers, Microstructure, Models (Simulations), Stability, Permeability, Adhesion, Surface properties.

The formation, nature and structural stability of films formed from polymer latexes are discussed in the light of experiments, photomicrographs and models. The autohesion of polymer particles is also explained for those cases in which the emulsifier layer is fixed on the particle surfaces. This makes possible the extension of the autohesion of particles during film formation, which hitherto had been limited to displaceable emulsifier layers, to all possible cases. (Author)

Kawada, T.
PREPARATION OF VINYL RESIN PASTE. [1963] 3p
Order from OTS or SLA $1.10 63-18993

Trans. of Japanese patent publication 1139-1952, special appl. 784-1950, pat. appl. 23 Jan 50, announced 1 Apr 52, by Soyo (Minatobi?) Gomu Kogyo Kabushiki Kaisha.

DESCRIPTORS: *Vinyl plastics, Particles, Coatings, Fatty acids, Binders, Solvent action

The invention relates to a method of preparing a paste of vinyl resin wherein the vinyl resin particles are coated with a high molecular-weight fatty acid, a resin acid, paraffin, tree wax, or insect wax prior to incorporation of a binding agent derived from phthalic acid, phosphoric acid, or sebacic acid. (Author)

Khloplyankina, M. S., Neiman, M. B., and Moiseev, V. D.
THERMAL DEGRADATION OF POLYMERS. II. COMPARATIVE INVESTIGATION OF GASEOUS OLEFINS RESULTING FROM THE DEGRADATION OF POLYPROPYLENE AND POLYETHYLENE. [23 [23 Apr 63] [15]p. (foreign text included) 17 refs.
Order from OTS or SLA $1.50 63-18362

Trans. of Plasticheskie Massy (USSR) 1961, no. 2, p. 9-12.

DESCRIPTORS: *Polyethylene plastics, Propenes, Pyrolysis, Degradation, Gases, Ethylene derivatives, Chromatographic analysis, Polarographic analysis, *Ozonides, Molecular structure, Molecular isomerism.

A method was developed for the study of the structure of microquantities of gaseous olefins including their chromatographic separation from gas mixtures, the ozonization and polarographic determination of the products of the reducing decomposition of ozonides. It was found that the structure of simple olefins formed on thermal degradation of polypropylene corresponds to the conclusions based on the hypothesis on the isomerization of the radicals. (Author) (See also 61-10983)

Kilian, H. G.
CRYSTALLIZATION AND MELTING OF VARIOUS HIGH POLYMERS ACCORDING TO X-RAY DETERMINATIONS. [1963] [40p] 61refs
Order from SLA $3.60 63-20005

Trans. of [Kolloid-Zeitschrift und Zeitschrift für Polymere] (West Germany) 1961, v. 176, no. 1, p. 49-62.

DESCRIPTORS: *Polymers, *Crystallization, *Melting, X-ray diffraction analysis, *Crystal structure, *Isocyanate plastics, *Polyethylene plastics, Annealing, Quenching (Cooling), Particle size.

By means of roentgenographic measurements of various high polymers it was shown that anisotropic crystal structures exist which are the result of the special structure of the macromolecule and which generally form during the crystallization of quenched samples. The reasons for the "stepwise" crystallization of the given polymers during annealing are discussed. The increase of the long period during the structural change of pseudostructure ⟶ crystal structure is attributed to the selective melting of the smallest particles with a simultaneous growth of the stable crystals. This leads to the theory that the melting of high polymers in a temperature interval depends on the mean crystallite size and on the crystallite size-distribution. (Author)

Korshak, V. V., Zamyatina, V. A., and Bekasova, N. I.
HETEROCHAIN POLYESTERS. XXV. INVESTIGATION OF POLYCONDENSATION IN A THIN LAYER. [1963] 8p. (figs. tables omitted) 6 refs.
Order from OTS or SLA $1.10 63-18263

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 11, p. 1586-1592.

DESCRIPTORS: *Polyester plastics, *Phthalates, *Condensation reactions, Thin films, Reaction kinetics, Catalysis, Heat of activation, *Ethylenes, Glycols, Evaporation, Heat transfer.

Polycondensation of polyethyleneterephthalate in a thin layer at atmospheric pressure was investigated. An inverse dependence of the reaction speed on the thickness of the layer of reacting substance was established.

Kinetics of polycondensation in a layer 1 mm. thick in the temperature interval from 244 to 296° in the presence of various catalysts and without catalysts were investigated. It was shown that polycondensation in a thin layer is a second order reaction. Activation energies were computed, whose magnitudes fluctuated in the limits of 11000-14000 cal/ mole, depending on the activity of the catalyst. Results of the work permit the conclusion to be made, that polycondensation proceeds with a significantly greater speed in a thin layer, than in normal apparatus, due to freer evaporation of ethylene glycol, and better conditions of heat transfer. (Author) (See also 61-13700)

Kozlov, P. V. and Berestneva, G. L.
EFFECT OF STRETCHING ON THE STRUCTURE AND PROPERTIES OF POLYETHYLENE TEREPHTHALATE FILMS. I. UNIAXIAL STRETCHING OF FILMS. [26 Apr 63] [25]p. 13 refs.
Order from OTS or SLA $2.60 63-18380

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1960, v. 2, no. 4, p. 591-600.

DESCRIPTORS: *Plastic films, *Polyester plastics, *Phalates, Ethylenes, Deformation, Mechanical properties, Tensile properties, Photographic film.

The mechanical properties and structural changes of polyethyleneterephthalate films subjected to uniaxial stretching over a broad range of temperature at varying rates and up to various limits were investigated. Orientation, relaxation and crystallization processes taking place in the films being stretched under the various conditions were also examined. At temperatures up to the softening (glass) region the strength characteristics of polyethyleneterephthalate films are determined by orientation processes. Above the softening region all three types of processes take place, a high rate of stretching determining to a large extent the predominant part played by orientation processes up to a comparatively high stretching temperature, permitting transparent films with high strength properties to be obtained under such conditions. It was shown that on stretching the films above the softening range the crystallization processes lead to two consecutive forms of the crystalline state: crystallization in primary structures with the formation of strong transparent films and by raising the stretching temperature further--a subsequent spherulitic crystallization giving rise to opaque films and to an abrupt fall in strength. On increasing the rate of stretching the temperature region within which microspherulite structures appear shifts considerably in the direction of higher temperatures. (Author)

Natta, G.
ISOTACTIC POLYMERS. [1963] 29p
Order from K-H $29.00 K-H 5388

Trans. of la Chimica e l'Industria (Italy) 1955, v. 37, no. 11, p. 888-900.
Another trans. is available from OTS or ETC $2.51 as 61-17645, MTWL-859, 33p.

DESCRIPTORS: *Polymers, *Styrene plastics, Crystal structure, Physical properties.

Pelzek, Victor John, Goldstein, Eugene Victor, and Miller, Adolph.
THERMOWELDABLE PACKING SUBSTANCE. [1963] 24p.
Order from OTS or SLA $2.60 63-18457

Trans. of [U. S.] patent 611,836 by Milprint Inc. (priority of two patent applications filed 22 Dec 60, 77,530 and 7 Nov 61, 150,660).

DESCRIPTORS: *Polyethylene plastics, *Packing materials, *Plastic films, Coatings, Thermoplastics, Plastic seals, Waxes.

This invention pertains to thermoweldable packing substances made up of films of linear polyolefin resin having a relatively high softening temperature, and it pertains more particularly to the improvement of the thermoweldable properties of films made up of linear polyolefin resins having a relatively high softening temperature, obtained by providing on them a layer or coating permitting the sealing under heat of the resinous films over a wide temperature range, clearly below the softening point of the non-coated film. This invention also pertains to formulated coating compositions so prepared as to obtain these characteristics of temperature, sealing under heat or thermoweldable. (Author)

Schleede, D., Schülde, F. and others.
DESIGN OF PLASTIC ITEMS AND CONSTRUCTION OF MOLDS FOR THE INJECTION MOLDING OF LOW-PRESSURE POLYETHYLENE AND POLYPROPYLENE. III. EFFECT OF PROCESSING CONDITIONS AND MOLDING FOR POLYPROPYLENE (Artikelgestaltung und Werkzeugkonstruktion bei der Spritzgussverarbeitung von Niederdruck-Polyäthylen und Polypropylen. III. Einfluss der Verarbeitungsbedingungen und Artikelgestaltung bei Polypropylen). [13 Feb 63] [25]p. (foreign text included) 7 refs.
Order from SLA $2.60 63-18388

Trans. of Plastverarbeiter (West Germany) 1962, v. 13, no. 1, p. 14-21.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Material forming, *Molding, Injection, Deformation, Inhibition.
(See also 63-18390)

Ullrich, Beuschel [H.] and others.
DESIGN OF PLASTIC ITEMS AND CONSTRUCTION OF MOLDS FOR THE INJECTION MOLDING OF LOW-PRESSURE POLYTHYLENE AND POLYPROPYLENE, I. [7 Feb 63] [16]p. 2 refs.
Order from SLA $1.60 63-18347

Trans. of der Plastverarbeiter (West Germany) 1961, v. 12, no. 10, p. 454-458.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Material forming, *Molding, Injection.

The formation of molded articles from low pressure polyethylene is considered. The aspects differing from polypropylene are especially discussed. The experiences communicated for low pressure polyethylene and polypropylene were gained mostly by processing Hostalen G and Hostalen PP.

Ullrich, Beuschel [H.] and others.
DESIGN OF PLASTIC ITEMS AND CONSTRUCTION OF MOLDS FOR THE INJECTION MOLDING OF LOW-PRESSURE POLYETHYLENE AND POLYPROPYLENE. II. CONSTRUCTION OF MOLD FOR LOW-PRESSURE POLYETHYLENE (Artikelgestaltung und Werkzeugkonstruktion bei der Spritzgussverarbeitung von Niederdruck-Polyäthylen und Polypropylen. II. Werkzeugkonstruktion bei Niederdruck-Polyäthylen). [12 Feb 63] [21]p. (foreign text included) 4 refs.
Order from SLA $2.60 63-18390

Trans. of Plastverarbeiter (West Germany) 1961, v. 12, no. 11, p. 504-511.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Material forming, *Molding, Injection, *Dies, Construction, Cooling, Colors

(See also 63-18347)

Rubber and Elastomers

PRODUCTION OF HYDROCARBON COPOLYMERS WITH THE HELP OF A VANADIUM/ALUMINUM CATALYST SYSTEM. [1963] [23]p.
Order from OTS or SLA $2.60 63-18856

Trans. of French patent 1, 295, 575, appl. 28 Apr 61, by E. I. DuPont de Nemours and Co., U. S. A., (appl. U. S. A., 2 May 60, ser. no. 26, 325 by Bruce S. Fisher) granted 2 May 62.

DESCRIPTORS: *Dienes, *Ethylenes, *Ziegler catalysts, Copolymerization, Hydrocarbons, Aluminum compounds, Vanadium catalysts, Alkyl radicals, Chlorides, Propenes, Vulcanization, *Polyethylene plastics, Elastomers

The invention relates to the production of hydrocarbon polymers and more particularly to an improved process for copolymerizing ethylene with a monoolefin and, if desired, a diene hydrocarbon. (Author)

Bresler, L. S., Dolgoplosk, B. A., Kolechkova, M. F., and Kropacheva, E. N.
COPOLYMERIZATION OF BUTADIENE WITH ISOPRENE UNDER THE INFLUENCE OF COMPLEXES OF BUTYLLITHIUM WITH TRIETHYLAMINE AND TETRAHYDROFURAN. [1963] 5p (table omitted) 11refs
Order from OTS or SLA $1.10 63-18852

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 144, no. 2, p. 347-348.

DESCRIPTORS: *Butadienes, *Isoprene, *Copolymerization, Complex compounds, Amines, Methanes, Ethyl radicals, Butyl radicals, *Lithium compounds, Oxides, Synthetic rubber.

This paper contains the results of the study of the copolymerization of butadiene and isoprene with complexes of butyllithium with triethylamine and tetrahydrofuran. The anionic character of the polymerization under the influence of these complexes was established. The copolymerization of butadiene with isoprene was carried out at the molar ration of catalyst-monomer = 1:300. Triethylamine and tetrahydrofuran were added in the amount of 70 moles per 1 mole of butyllithium. The solution of butyllithium in n-heptane was prepared and analyzed. (Author)

Debus.
CONCERNING COMMINUTION OF SODIUM AND THE PREPARATION OF VISCOUS ALKALI METAL SUSPENSIONS IN LATICES FROM THE POLYMERIZATION OF BUTADIENE TO ZAHLEN-BUNA. [1963] 13p (figs omitted) 5 refs
Order from SLA $1.60 63-18215

Trans. of report from an unidentified source, Ludwigshafen, 7 May 36.

DESCRIPTORS: *Synthetic rubber, Production, *Butadienes, Polymerization, *Catalysts, Alkali metals, *Potassium, *Sodium, Particle size, Surface properties.

Dischka, Gy. and Hajmasy, T.
FATIGUE TESTS ON TIRE CORD (Ermüdungsversuche an Rohkorden). [13 Mar 63] [32]p. 33 refs.
Order from SLA $3.60 63-18340

Trans. of Acta Technica (Hungary) 1962, v. 38, no. 1/2, p. 235-257.

DESCRIPTORS: *Tires, *Cordage, Fatigue (Mechanics), Test methods, Stresses, Automotive industry, *Textiles, *Fibers (Synthetic), Rubber, Composite materials, Deformation.

Kruckels, Walter.
LATEX IMPREGNATION AND HEAT STRETCHING OF TIRE CORD (Lateximprägnierung und Heissverstreckung von Reifenkord). [9 Apr 63] [9]p.
Order from SLA $1.10 63-18368

Trans. of [Gummi, Asbest, Kunststoffe] (West Germany) 1960, v. 13, p. 706-708.

DESCRIPTORS: *Tires, *Cordage, Stretch forming, Heat, Impregnation, Rubber, *Fibers (Synthetic), Stresses, Adhesion, *Latex.

Monastyrenko, E. M. and Tochilina, L. P.
LOSS OF STRENGTH BY TIRE CORD ON TWISTING. [7 Mar 63] 4p. 2 refs.
Order from OTS or SLA $1.10 63-18400

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 6, p. 66.

DESCRIPTORS: *Tires, *Viscose, *Cordage, Filaments, Density, Humidity, Temperature, Stresses, Mechanical properties.

The loss of strength by tire cord in the twisting processes was found to diminish with increase of the linear density of the individual filaments making up the yarn. Increased relative humidity and temperature in the twisting room, as compared to the established standard, leads to an increase in the strength loss of cord yarn. (Author)

Monastyrskaya, M. S., Pavlov, S. A., and Skornyakova, T. A.
OBTAINING VAPOR-PERMEABLE FILMS FROM CARBOXYLIC LATEXES. [1963] 8p. (figs. tables omitted) 6 refs.
Order from OTS or SLA $1.10 63-18385

Trans. of Izv[estiya] Vys[shikh] Ucheb[nykh] Zavedenii. Tekhnologiya Legkoi Promyshlennosti (USSR) 1960, no. 4[17] [p. 39-45].

DESCRIPTORS: *Elastomers, *Latex, *Plastic films, *Acrylic resins, Acrylic acids, Methyl radicals, Esterification, Colloids, *Plastic films, Moisture, Vapors, Permeability, *Glycols, *Artificial leather.

The optimum conditions for mixing glycol with carboxylic-containing polymers in latexes, resulting in the formation of durable films, were found. It was indicated that the vapor-permeability of films, like their durability, increases with a rise in latex pH. Increasing the carboxylic group content in the polymerized chain, increased the vapor-permeability of films, and simultaneously raised their durability. The films obtained rapidly absorbed moisture, and likewise, gave it up quickly. After this, the residual moisture was less than equilibrium. The moisture capacity of films depends in significant measure on the degree of the hydrophillic nature of the polymer. (Author)

Shvarts, A. G.
DETERMINATION NOMOGRAMS FOR DENSITY OF THREE-DIMENSIONAL LATTICE IN VULCANIZATES. [1963] [9]p. 13 refs.
Order from OTS or SLA $1.10 63-18753

Trans. of Kauchuk i Rezina (USSR) 1957, v. 16, no. 7, p. 31-34.

DESCRIPTORS: *Vulcanizates, Nomographs, Density, Crystal lattices, Rubber, Synthetic rubber, Solvents, Deformation.

Thinius, Kurt.
POLYISOBUTENE: PRODUCTION, TREATMENT AND APPLICATION AS RUBBERLIKE PLASTIC, PT. I [1963] 14p 32refs
Order from SLA $1.60 63-20000

Trans. of Kautschuk und Gummi (West Germany) 1951, v. 4, p. 53-55.

DESCRIPTORS: *Polymers, *Butenes, *Ethylenes, Polymerization, Synthesis (Chemistry), Processing, *Elastomers, Synthetic rubber, Plastics, Polyethylene plastics.

Topics include: polymerization products from the series of olefin hydrocarbons; the polymerization reaction; purification process for polyisobutene; increasing the thermostability; and, thermal depolymerization.

Thinius, Kurt.
POLYISOBUTENE: PRODUCTION, TREATMENT, AND APPLICATION AS RUBBERLIKE PLASTIC, PTS. II-III (IN PART). [1963] 18p 19refs
Order from SLA $1.60 63-20001

Trans. of Kautschuk und Gummi (West Germany) 1951, v. 4, p. 92-95.

DESCRIPTORS: *Polymers, *Butenes, *Ethylenes, Solubility, Solvents, Viscosity, Osmotic pressure, Fractionation, Machines, Processing, *Elastomers, Polymerization, Chemical properties.

Topics include: solubility and solvents; viscosity measurements; osmotic measurements and fractionation; machines and other expedients for working; and production of films. (See also 63-20000)

Wood and Paper

DEVICE FOR REGULATING THE DE-WATERING OF PULP WEBS ON FOURDRINIER WIRES OF PAPER, BOARD, ETC. MACHINES. Oct 62, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-20466

Trans. of German patent specification 591,715, cl. 55d, gr. 801, V 28078 VII/55d, granted 11 Jan 34 (pat. from 17 Apr 32) by J. M. Voith Co.

DESCRIPTORS: *Wood pulp machines, *Paper, Water, Separation, *Fiberboard, Industrial equipment, Wire, Sheets, Processing.

The invention relates to a device for regulating the de-watering of pulp webs on the fourdrinier wires of paper, board etc. machines and is intended to effectively influence the processes on the wire leading towards sheet formation. (Author)

PROCEDURE FOR THE SIZING OF PAPER. [1963] 3p
Order from OTS or SLA $1.10 63-18776

Trans. of Italian patent 354,510, appl. 30 Aug 37, issued 25 Nov 37, by I. G. Farbenindustrie AG.

DESCRIPTORS: *Paper, *Sizing, Wood pulp, Polyamide plastics, Mixtures

[PROCESS TO OBTAIN FROM FIBROUS VEGETABLES MOST OF THE LIGNINE OF THE STRATING MATERIAL AND SUITABLE FOR TRANSFORMATION INTO (REGENERATION) PRODUCTS]. [1963] 10p.
Order from OTS or SLA $1.10 63-18808

Trans. of Italian patent 463,918, by Azienda Brevetti Industriali (A. B. I.) filed 12 July 49, granted 12 June 51. Also available from OTS or SLA $1.10 as 63-23738 [1963] 10p.

DESCRIPTORS: *Fibers (Natural), *Cellulose, *Lignin, *Plants (Botany), Heat treatment, Sodium, Calcium, Magnesium, Ammonia, Sulfur compounds, Dioxides, *Paper, *Pressboard

One object of the invention is to carry out a process which, starting from fibrous vegetable materials, allows to reach a vast range of regeneration products, for instance paper products, fibrous panels, etc. with a high yield, in such a way as to keep in the products most of the ingredients of the starting material, that is, apart from the cellulose fibres, also most of the lignine. Another object of this invention is to carry out a process which allows to obtain products in which the cellulose fibres keep their initial integrity. A further object is to carry out a process which, by means of a semi-manufacture, having the morphological characteristics of a common raw cellulose, allows to obtain, through suitable variants with regard to the subsequent operations, a paper product and solid fibrous panels, both the fibres of which adhere to one another, which products have the aspect and firmness of reconstructed wood. (Author)

Bartunek, Richard.
RECENT CONTRIBUTIONS TO THE THEORY OF THE VISCOSE PROCESS (Beiträge zur Viskosechemie). [10 Aug 63] [20]p. 19 refs.
Order from SLA $1.60 63-18276

Trans. of das Papier (West Germany) 1962, v. 16, no. 10a, p. 568-574.

DESCRIPTORS: *Viscose, Processing, Theory, Chemical industry, Cellulose, Sodium compounds, Hydrates, Aging (Materials), Xanthic acid, Solubility, *Wood pulp, Sheets, *Paper industry

Particular consideration was given to such items as: the identification of the NaOH-hydrate complex participating in the formation of sodium cellulose I; the specific pulp sheet properties causing insufficient mercerization in the dipping press; studies on the reaction mechanism in the aging process and the influence of resins, waxes and fats on the rate of pre-ripening; cellulose properties leading to variations of the optimum NaOH concentration which is necessary for satisfactory dissolution; the reasons for difficulties in the xanthation reaction owing to the influence of different alkali hydroxides, especially with KOH, but also with LiOH, the effect of which is compared with that of NaOH; the differences between the Gamma Number of the "dry xanthate" and that of the "moist xanthate"; the factors determining the maximum of the curve showing the rate of ripening and coagulation in the early stage of the ripening process. (Author)

Brecht, Walter and Körner, Ludwig.
LABORATORY INVESTIGATIONS ON THE SUITABILITY OF SOME INSTRUMENTS FOR RAPID MEASUREMENT OF MOISTURE CONTENT IN PAPER. C. RAPID DETERMINATION OF MOISTURE CONTENT IN PAPER THROUGH DIELECTRIC MEASUREMENTS. [1963] 27p. (figs omitted) 16refs
Order from SLA $2.60 63-20136

Trans. of das Papier (West Germany) 1954, v. 8, p. 419-430.

DESCRIPTORS: *Paper, *Moisture, Determination, Dielectrics, Instrumentation, Wood pulp, Resistance (Electrical), Measurement

Brüning, D.
SYNTHETIC FIBERS: A RAW MATERIAL IN THE MANUFACTURE OF PAPER (Synthetische Fasern als Papierrohstoff). [6 May 63] [15]p. (figs. omitted) 63 refs.
Order from SLA $1.60 63-18366

Trans. of das Papier (West Germany) 1963, v. 17, no. 2, p. 45-52.

DESCRIPTORS: *Fibers (Synthetic), Processing, Materials, Cellulose, Polyamide plastics, Paper industry, Machines.

A state-of-the-art survey.

Brüning, D.
USE OF SYNTHETIC FIBRES IN THE PAPER INDUSTRY: STATE OF THE ART AND DEVELOPMENT TRENDS. [1963] 7p.
Order from SLA $1.10 63-18947

Trans. of mono. (paper) read at the Meeting of Committee for Paper Processing, Institute for Cellulose Chemistry, Darmstadt, 14 Dec 61.

DESCRIPTORS: *Paper industry, *Fibers (Synthetic), Cellulose chemistry, Textiles, Machines.

At present regenerated cellulose fibres are processed mainly in conjunction with chemical pulp fibres for filter papers, papers with good air permeability values, overlay papers etc. on the papermaking machine. The employment of fibrillatable regenerated cellulose fibres has also let to products which have a "handle" similar to that of paper. Products for the textile sector consisting of 100% regenerated cellulose fibres are also going to be offered for sale in the U. S. A. as lining materials. Thanks to developments in fibrids, all-synthetic papers have come on to the market in the U. S. A. in the last two years. Marketing in Europe is still in its initial stages, this mainly because the prices of polyester, polyamide and polyaoryl nitrile fibres which are suitable for the papermaking industry are as yet too high. All-synthetic fibres mixed with chemical pulps are also being marketed in Europe, e. g. as map papers. Since the papermaking industry is extremely interested in improvements in quality and extended markets, it is possible to predict for the next few years a considerable increase in development activity which must be undertaken by fibre manufacturers, auxiliary suppliers, and machine designers. (Author)

Hasper, K. D.
EMBOSSING OF HARD PAPERBOARD (Prägen von Hartpappen). 14 Mar 60, 6p. (figs. omitted).
Order from SLA $1.10 63-16781

Trans. of Wochenblatt für Papierfabrikation (West Germany) 1959, v. 87, no. 16, p. 702-705.

DESCRIPTORS: *Fiberboard, Paper industry, Machines, Hydraulic presses, Manufacturing methods, Photoengraving.

Klauditz, Wilhelm and Buro, Andreas.
STUDIES OF PARTICLE BOARD COMPOSED OF MIXED PARTICLES OF VARIOUS SPECIES OF WOOD [Untersuchungen an Spanplatten aus Spangemischen Verschiedener Holzarten]. Mar 61 [20]p. 12 refs.
Order from SLA $1.60 63-16783

Trans. of Holz-Zentralblatt (West Germany) 1960 [v. 86] no. 85 [p. 1195-1197].

DESCRIPTORS: Panels (Structural), *Wood, Mixtures, *Fiberboard, Density, Quality control, Mechanical properties

Experiments covering the properties of particle board composed of mixtures of various species of wood revealed that the average density of the wood mixture used has a material effect on the quality of the board. A diagram was developed to determine approximately the changes in panel density necessary when other species or mixtures of several species are used. The distriburion of density across the panel cross-sections was established in the case of particle board composed of mixed particles. A three-layer panel composed of a spruce and beech mixture was tested to set an example for the various possibilities of combining particles in multi-layer board. A general estimate of particle board production costs confirmed earlier observations to the effect that economic advantages are gained from the use of admixtures consisting of heavy deciduous woods such as beech and oak. (Author)

Kubler, Hans.
SHRINKAGE AND SWELLING OF WOOD BY COLDNESS (Schwinden und Quellen des Holzes durch Kalte). [1963] 15p 14refs
Order from SLA $1.60 63-18523

Trans. of Holz als Roh- und Werkstoff (West Germany) 1962, v. 20, no. 9, p. 364-368.

DESCRIPTORS: *Wood, Deformation, Water, Freezing, Hysteresis, Ice, Crystals.

Small beechwood samples (Fagus silvatica) of different moisture content were cooled down and heated again to get information about corresponding dimensional changes in wood below the freezing-point of water. Apart from small thermal contractions and expansions, considerable length changes occurred. They were apparently caused by water freezing out of the cell walls to ice crystals in the cell cavities. Coldness shrinkage continued with decreasing temperature down to about -55°C. In reheating the specimens, reswelling took place with rising temperature, though a distinct hysteresis was observed: at certain temperatures, the samples were comparatively shorter than in the cooling process. The relation of coldness shrinkage in ring, radial and fibre direction was similar to the normal shrinkage of wood. With partly air-dried samples, coldness shrinkage started at lower temperatures corresponding to the preceding shrinkage value. In water-saturated wood, the expansion of freezing free water brought about increases in the dimensions of some specimens, others were almost constant in length. With all tests, no sign of liquid water freezing in the cell walls was present, so that the theory of capillary condensation in wood has to be doubted. (Author)

Matthes, A.
USE OF STATISTICS IN THE RESEARCH WORK OF THE PULP AND REGENERATED FIBER INDUSTRY. [7 Feb 63] [26]p. 3 refs.
Order from SLA $2.60 63-18272

Trans. of das Papier (West Germany) 1962, v. 16, no. 6, p. 229-236.

DESCRIPTORS: Industrial research, Statistical analysis, *Wood pulp, *Fibers (Synthetic), Paper industry, Rupture, Probability, Tensile properties, Viscose, Cellulose, Chemical properties.

Philipp, B.
ON THE REACTIVITY OF CHEMICAL PULPS. [23 May 63] [17]p. 10 refs.
Order from SLA $1.60 63-18271

Trans. of Zellstoff u[nd] Papier (East Germany) 1959, v. 8, no. 7, p. 251-256.

DESCRIPTORS: *Wood pulp, *Viscose, *Fibers, Molecular structure, Reaction kinetics, *Cellulose, Chemical reactions, Phase studies.

Some investigations on the reactivity of chemical pulps are reported which aimed first at the solution of the problem concerning the relationship between supermolecular fiber structure, reaction kinetics and processibility during the viscose process, and second, to give some suggestions and indications for the laboratory tests of the processibility in the producing or converting industry. (Author)

Schulze, B. and Taeden, G.
THE PENETRATION OF WOOD PRESERVATIVES. [1963] [80p] (figs omitted) 52refs
Order from SLA $7.60 63-18554

Trans. of [Holzforschung] (West Germany) 1950, v. 4, no. 3/4, p. 79-107.

DESCRIPTORS: *Wood, *Preservation, Penetration, Liquids, Paints, Sprays, Impregnation, *Protective treatments.

MATHEMATICS

AMERICAN MATHEMATICAL SOCIETY TRANSLATIONS, 1962, SER. 2, VOL. 19. 1962, 321p
Order from American Mathematical Society, Providence, R. I. $5.30

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Matematicheskaya, 1944, v. 8, p. 3-48; 1948, v. 12, p. 57-78; 1956, v. 20, p. 145-166; Uspekhi Matematicheskikh Nauk (USSR) 1953, v. 8, no. 4(56) p. 3-63; 1956, v. 11, no. 2(68) p. 31-66, ##125-159; 1957, v. 12, no. 1(73) p. 99-142; Akademiya Nauk SSSR. Doklady, 1959, v. 124, no. 6, p. 1211-1214; v. 125, no. 5, p. 974-977; Matematicheskii Sbornik (USSR) 1959, v. 47(89) no. 1, p. 3-16; v. 48(90) no. 3, p. 257-276; v. 49(91) no. 3, p. 341-346.
##Another trans. is available from OTS or SLA $5.60 as 63-14489 [1963] [52p].

DESCRIPTORS: *Mathematics, Translations, Number theory, Functions, Theory

Contents:
On the field of combinatory analysis, by V. L. Goncharov
Probabilistic methods in the theory of numbers, by I. P. Kubilyus
On the arithmetic equivalent of analyticity of the Dirichlet L-series on the line Res=1, by A. O. Gel'fond
On the completeness of systems of analytic functions, by S. N. Mergelyan
The zeros of a class of multiple-valued functions, by N. N. Meiman
The theory of functions of class HB and B, by N. N. Meiman
A characterization of the growth of an entire function of two variables and its application to the summation of double power series, by V. K. Ivanov
On linear combinations of entire functions, by I. F. Lokhin
On a class of polynomials with extremal properties, by V. L. Pokrovskii
##On the approximation of real functions in the sense of P. L. Chebysheva, by S. I. Zukhovitskii
On the theorem of uniform continuity, by V. A. Uspenskii
On the representation of an even number as the sum of a prime and of an almost-prime, by A. Renyi

AMERICAN MATHEMATICAL SOCIETY TRANSLATIONS, 1962, SER. 2, VOL. 20. 1962, 364p
Order from American Mathematical Society, Providence, R. I. $5.30

Trans. of Moskovskoe Mathematicheskoe Obshchestvo. Trudy (USSR) 1955, v. 4, p. 237-290; Uspekhi Matheticheskikh Nauk (USSR) 1956, v. 11, no. 6(72) p. 183-202; 1957, v. 12, no. 5(77) p. 3-148; 1958, v. 13, no. 4(82) p. 29-88; 1959, v. 14, no. 1(85) p. 21-85.

DESCRIPTORS: *Mathematics, Translations, Partial differential equations.

Contents:
On the asymptotic behavior of the spectral function and expansion in eigenfunctions of the equation ... by B. M. Levitan
Spectral analysis of non-selfadjoint operators, by M. A. Naimark
The method of finite differences in the theory of partial differential equations, by O. A. Ladyzenskaya
A priori estimate in L_p and generalized solutions of elliptic equations and systems, by A. I. Koshelev
Some questions in the qualitative theory of elliptic and parabolic equations, by E. M. Landis
Regular degeneration and boundary layer for linear differential equations with small parameter, by M. I. Vishik and L. A. Lyusternik.

AMERICAN MATHEMATICAL SOCIETY TRANSLATIONS, 1962, SER. 2, VOL. 21, 1962, 416p
Order from American Mathematical Society, Providence, R. I. $6.00

Trans. of Matematicheskii Sbornik (USSR) 1956, v. 38(80) p. 283-302; 1958, v. 46(88) no. 1, p. 91-124; Akademiya Nauk SSSR. Izvestiya. Seriya Matematicheskaya, 1956, v. 20, p. 99-136; 1959, v. 23, no. 2, p. 185-212; Uspekhi Matematicheskikh Nauk (USSR) 1955, v. 10, no. 4(66) p. 3-74; Moskovskoe Matematicheskoe Obshchestvo. Trudy (USSR) 1956, v. 5, p. 311-351; 1957, v. 6, p. 371-463; Leningrad U. Vestnik (USSR) 1956, v. 11, no. 19, Seriya Matematiki, Mekhaniki i Astronomii no. 4, p. 5-17; 1957, v. 12, no. 7, Seriya Matematiki, Mekhaniki i Astronomii no. 2, p. 15-44; 1958, v. 13, no. 7, Seriya Matematiki, Mekhaniki i Astronomii no. 2, p. 14-26; no. 13, Seriya Matematiki Mekhaniki i Astronomii no. 3, p. 27-34; no. 19, Seriya Matematiki, Mekhaniki i Astronomii no. 4, p. 5-8.

DESCRIPTORS: *Mathematics, Translations, Topology, Groups (Mathematics), Differential equations.

Contents:
On the dimension of proximity spaces, by Yu. M. Smirnov
On universal spaces for certain classes of infinite dimensional spaces, by Yu. M. Smirnov
On dimensional properties of infinite dimensional spaces, by E. G. Sklyarenko
Second obstructions for cross-sections, by V. G. Boltyanskii
The homotopy classification of cross-sections, by V. G. Boltyanskii
Compact global Lie groups, by E. B. Dynkin and A. L. Onishchik
Some remarks on the theory of spherical functions on symmetrical Riemannian manifolds, by F. A. Berezin and I. M. Gel'fand
Laplace operators on semisimple Lie groups, by F. A. Berezin
Uniqueness theorems for surfaces in the large, pts. I-V, by A. D. Aleksandrov

CHINESE MATHEMATICS, 1963, VOL. 3, NO. 4, P. 361-454. Sep 63, 1v. 34 refs.
Order from The American Mathematical Society, Providence, R. I. $20.00/vol.

Trans. of [Shu Hsüeh Hsüeh Pao] (Chinese People's Republic) 1962, v. 12, no. 4 and index v. 12.

DESCRIPTORS: *Mathematics, *China, *Numerical analysis, *Sequences, *Groups (Mathematics), *Algebraic topology, *Boundary value problems, *Nonlinear differential equations, *Communication theory, *Number theory, *Inequalities

Contents:
Several iterative processes with relatively high rate of convergence and a method for estimating the multiplicity of real roots, by Hsü Li-che
Imbedding theory and cohomology of permutation groups, II, by Yüeh Ching-chung
On the structure of the quotient group of the unitary group with respect to its commutator subgroup, by Wan Che-hsien

The proper posing of free boundary problems for nonlinear parabolic differential equations, by Chiang Li-shang
A necessary and sufficient condition for satisfaction of the information criterion in the Shannon theorem, by Shen Shih-yi
The number of lattice points in a given region, by Ch'en Ching-jun
A comment on K. P. Lee's paper "The transformed form of Cauchy's inequality", by Shen Hsieh ch'ang
Index for the year

FINITE AUTOMATA AND LINEAR PROGRAMMING: RECENT SOVIET WORK. 14 Oct 63, 17p 9refs
JPRS: 21444.
Order from OTS $0.50 63-31938

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 151, no. 3, p. 493-496, 515-518.

DESCRIPTORS: *Automation, Cybernetics, *Functional analysis, *Numbers, *Linear programming, Transportation.

Contents:
The cardinal numbers of sets of precomplete classes of certain functional systems connected with automata, by V. B. Kudryatsev
Multidimensional linear programming problems of the transport type, by B. S. Verkhovskii.

Beletskii, V. V.
ON ONE CASE OF THE MOTION OF A SOLID BODY NEAR A FIXED POINT IN THE NEWTONIAN FIELD OF FORCES. [1963] [9p] 3refs
Order from OTS or SLA $1.10 63-18711

Trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1963, v. 27, no. 1, p. 175-177.

DESCRIPTORS: *Celestial mechanics, *Solids, Motion, *Equations of motion, Gravity, Mathematical analysis, Differential equations, Intergration.

The following motion of a body near a fixed point in the Newtonian field of forces is investigated. Let the body possess a dynamic symmetry (A = B), the fixed point coincide with center of the body masses, and, besides, the initial conditions be such: the lateral components of the angular velocity are equal to zero ($p_0 = q_0 = 0$,) whereas the longitudinal component is arbitrary ($r_0 \neq 0$). If there would not exist the Newtonian field of forces, then, as known, in this case the body would retain a constant direction of the axis of symmetry in the space. Therefore, all the effects in the motion of the axis of the body for the considered example are conditioned only by the presence of the Newtonian field. The action of the Newtonian field appears in this case in a pure form, without being complicated by more general initial conditions. (Author)

Dubovitskii, A. Ya. and Milyutin, A. A.
PROBLEMS ON THE EXTREMUM IN THE PRESENCE OF LIMITATIONS. [1963] [10p] 3refs
Order from OTS or SLA $1.10 63-18707

Trans. of [Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 4, p. 759-762].

DESCRIPTORS: *Calculus of variations, Partial differential equations, Probability, Functional analysis, Mathematics.

This paper deals with a new approach to problems of variational calculus. The method is applicable to "classical" and "non-classical" problems. One general theorem is given. This theorem is applied to a classical problem to obtain the Euler equations as a necessary condition for optimality. A second example leads to the maximum principle of L. S. Pontryagin. A third example considered is a minimax problem for which a maximum principle is derived as a theorem. Finally the method is applied to the inequality of S. N. Bernstein. (Author)

Kolmogorov, A.
ON ANALYTIC METHODS IN THE THEORY OF PROBABILITY. Nov 60 [48]p.
Order from SLA $4.60 63-18360

Trans. of Math[ematische] Annalen (Germany) 1931, v. 104, p. 415-458.
Another trans. is available from SLA $6.60 as 62-10151 [1961] [61]p.

DESCRIPTORS: *Probability, Statistical processes, Statistical functions, Measure theory, Differential equations.

Kostychev, G. I.
CERTAIN VARIATIONAL PROBLEMS ON APPROXIMATION AND INTERACTION. 12 June 63 [15]p. 2 refs.
FTD-TT-63-401 AD-411 181.
Order from OTS or SLA $1.60 63-23531

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962 [v. 5] no. 3, p. 25-33.

DESCRIPTORS: Communication theory, *Signals, Propagation, *Differential equations, Functions, Interaction, Mathematical analysis, Calculus of variations.

Variational problems are 1, 2 which involve determination of functions depending on two or several arguments but which reduce to solution of systems equivalent to systems of ordinary differential equations. These include the problems for the interaction of systems when their state depends on one argument and the propagation of reciprocity signals, generally skeaking, depends on another argument. (Author)

Krylov, V. I.
APPROXIMATE CALCULATION OF INTEGRALS, tr. by A. H. Stroud. 1962, 357p
Order from Macmillan Co., 60 Fifth Ave., New York, 11, N. Y. $12.50

Trans. of mono. Priblizhennoe Vychilislenie Integralov, Moscow, 1959, 327p.

DESCRIPTORS: *Integrals, *Numerical analysis.

Latysheva, T. S.
THE LINEAR VARIATION IS THE LENGTH OF THE CURVE. [1963] [10p] 2refs
Order from OTS or SLA $1.60 63-18709

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Matematicheskaya, 1963, v. 27 [no. 1] p. 61-66.

DESCRIPTORS: *Measure theory, Equations, Mathematics, *Differential geometry, Topology.

It is demonstrated in the present paper that for sufficiently simple sets (smooth arcs) the linear variation of the set and its length are coinciding with an accuracy to the normalization. (Author)

Panteleev, V. L.
THE QUESTION ON THE CONSTRUCTION OF THE SOLUTIONS OF LINEAR DIFFERENTIAL EQUATIONS WITH SLOWLY CHANGING PARAMETERS. [1963] [8p] 3refs
Order from OTS or SLA $1.10 63-20068

Trans. of Moscow U. Vestnik. [Seriya 3: Fizika, Astronomiya] (USSR) 1963 [v. 18] no. 2, p. 25-29.

DESCRIPTORS: *Differential equations, Integration, Transformations (Mathematics), *Equations of motion, *Gravimeters, Oscillation, Perturbation theory, *Numerical analysis.

The problem on the determination of the solution of linear differential equations with slowly changing parameters is reduced to the finding of the perturbed frequency for the oscillation of the system, close to the frequency of natural oscillations, by means of the iteration method. The motion of a pendulum on a vertically oscillating support is considered. (Author)

Pontryagin, L. S., Boltyanskii, V. G. and others.
THE MATHEMATICAL THEORY OF OPTIMAL PROCESSES, by K. N. Trirogoff. 1962, 360p
Order from Interscience Publishers, Inc., 250 Fifth Ave., New York, 1, N. Y. $11.95

Trans. of mono. Matematicheskaya Teoriya Optimal'nykh Protsessov, Moscow, 1961, 391p.
Another trans. is available from OTS $7.00 as 62-11751, JPRS-15089, 4 Sep 62, 522p.

DESCRIPTORS: Control, *Control systems, Optimalization, Synthesis, Mathematics, Theory, *Calculus of variations, Differential equations, Equations, Statistical processes, Programming

Contents:
The principle of the maximum
Proof of the principle of the maximum
Linear optimal high-speed actions
Problems
The principles of the maximum in the calculus of variations

Sarmanov, O. V. and Zakharov, V. K.
MEASURES OF DEPENDENCE BETWEEN VARIABLES AND THE SPECTRA OF STOCHASTIC KERNELS AND MATRICES [Mery Zavisimosti Mezhdu Sluchainymi Velichinami i Spektry Stokhastiche Yader i Matrits] tr. by Z. D. Knowles. 18 Jul 63, 29p 9refs NIH no. 7-21-63.
Order from OTS or SLA $2.60 63-23551

Partial trans. (p. 966-990) of Matematicheskii Sbornik (USSR) 1960, v. 52(94) no. 4, p. 953-990.

DESCRIPTORS: *Correlation techniques, Statistical functions, *Matrix algebra, *Probability, Arithmetic operations.

(See also 63-23177)

Tsypkin, Ya. Z.
COMPUTATION OF PROCESSES IN NONLINEAR SYSTEMS OF DISCONTINUOUS CONTROL (Raschet Protsessov v Nelineinykh Sistemakh Preryvistogo Regulirovaniya). [1963] 20p 4refs
Order from OTS or SLA $1.60 63-20079

Trans. of #Avtomatika i Telemekhanika (USSR) 1956, v. 17, no. 6, p. 500-512.

DESCRIPTORS: *Nonlinear systems, *Pulse modulation, *Control systems, Feedback, Delay circuits, Design, Equations, Mathematical analysis.

A method for construction of processes in discontinuous control systems of the second type (pulse-width modulated discrete systems), in which these processes are essentially nonlinear with the finite deviations of the error, is discussed. A standard system of discontinuous control with a delayed feedback is examined as an example. (Author)

Yakovleva, M. A. and Pervozvanskaya, T. N.
LARGE-BLOCK PROGRAMMING SYSTEM [AND] ANALYTICAL CALCULATIONS ON AN ELECTRONIC COMPUTER FOR THE SOLUTION OF CERTAIN TYPES OF DIFFERENTIAL EQUATIONS. 13 June 63 [36]p. 2 refs. FTD-TT-63-449.
Order from OTS or SLA $3.60 63-23638

Unedited rough draft trans. of A[kademiya] N[auk] SSSR. Matematicheskii Institut. Trudy, 1962, v. 66, p. 4-15, 37-44.

DESCRIPTORS: *Programming (Computers), Algorithms, *Differential equations, Digital computers.

Computing Devices

Aschmoneit, Ernst-Karl.
SIMPLE BINARY COUNTER FOR ADDITION AND SUBTRACTION. [1963] 6p. (figs. omitted) 2 refs.
Order from SLA $1.10 63-18875

Trans. of Elektronik (West Germany) 1960 [v. 9] no. 8, p. 232-234.

DESCRIPTORS: *Computers, Computer logic, Design, Operation, Arithmetic operations.

Technical details are given of a binary counter made by Servomechanisms, Inc.

Pontryagin, L. S.
OPTIMAL SYSTEMS OF AUTOMATIC CONTROL: SOME MATHEMATICAL PROBLEMS ARISING IN CONNEXION WITH THE THEORY OF OPTIMAL SYSTEMS OF AUTOMATIC CONTROL [AND] ##OPTIMAL CONTROL PROCESSES. [1960] [26p] 9refs [DSIR NLL] M1354/1355.
Order from OTS or SLA $2.60 60-17189

Trans. of mono. [Akademiya Nauk SSSR. Sessiya po Nauchnym Problemam Avtomatizatsii Proizvodstva, 15-20 Oct 56. Trudy] v. 2 [Osnovnye Problemy Avtomaticheskogo Regulirovaniya i Upravleniya] 1957, p. 107-117 and ##Uspekhi Matematicheskikh Nauk (USSR) 1959, v. 14, no. 1(85) p. 3-20.
##Other translations are available from ATS $20.95 as ATS-03L33R [1959] 19p and from OTS or SLA $3.60 as 61-27264, MCL-491, Apr 60 [31p].

DESCRIPTORS: *Automation, *Control systems, *Optimalization, Linear systems, Nonlinear systems, Calculus of variations, Synthesis

For abstract of "Optimal control processes" see Technical Translations 7: 427, 1962.

MECHANICS

ACTA MECHANICA SINICA, 1959, VOL. 3, NOS. 1, 3-4; 1960, VOL. 4, NOS. 1-2: TABLE OF CONTENTS AND SELECTED ABSTRACTS, tr. by N. H. Ng. Chinese (Mainland) Science and Technology Journals. Jan 63 [19]p. Emmanuel Coll. Research Language Center Rept. No. Mechanics-1; AD-407 706.
Order from OTS or SLA $1.60 63-19645

Trans. of tables of contents and selected abstracts of Li Hsüeh Hsüeh Pao (Chinese People's Republic) 1959, v. 3, no. 1, 3-4; 1960, v. 4, no. 1-2.

DESCRIPTORS: *Abstracts, *Mechanics, *China, Stresses, Deformation, Elasticity, Solids, Turbulence, Vortices, Creep, Theory, Sheets, Loading (Mechanics), Earthquakes, Dams, Models (Simulations), Turbine wheels, Turbine blades.

SOVIET ABSTRACTS: MECHANICS, 1959, NO. 8, ABSTRACTS 8318-9548K. [1963] [127]p.
Order from OTS or SLA $10.10 63-23739

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1959, no. 8.

DESCRIPTORS: *Abstracts, *Mechanics, Space flight, Stability, Motion, Machines, Hydrodynamics, Magnetohydrodynamics, Gas flow, Aerodynamics, Acoustics, Aeroelasticity, Guided missiles, Hydraulic research, Liquids, Viscosity, Boundary layer, Heat transfer, Gases, Meters, Elasticity, Plasticity, Soil mechanics, Rods, Beams (Structural), Structural parts, Ships, Materials, Mechanical properties.

Carafoli, Elie.
RESEARCH IN APPLIED MECHANICS. 12 Sep 63, 3p. JPRS: 21068.
Order from OTS $0.50 63-31756

Trans. of Scinteia (Rumania) 1963, 22 June, p. 4.

DESCRIPTORS: *Scientific research, *Applied mechanics, *Rumania

A brief survey is made of the applications to various industrial enterprises of the results of experimental research in applied mechanics.

Galerkin, B. G.
RODS AND PLATES: SERIES IN SOME QUESTIONS OF ELASTIC EQUILIBRIUM OF RODS AND PLATES. [1963] [60]p. 13 refs.
Order from OTS or SLA $5.60 63-18924

Trans. of Vestnik Inzhenerov i Tekhnikov (USSR) 1915, no. 19, p. 897-908.

DESCRIPTORS: *Rods, *Beams (Structural), *Elasticity, Stresses, Load distribution, Differential equations, Series.

Krasheninnikova, N. L.
ON THE UNSTEADY MOTION OF GAS DISPLACED BY A PISTON. [1963] 20p (figs. formulae omitted) 4refs
Order from OTS or SLA $1.60 63-20282

Trans. of [Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk]. Izvestiya, 1955, no. 8, p. 22-36.

DESCRIPTORS: *Gas flow, *Pistons, *Detonations, Shock waves, Equations of motion, Velocity, Reynolds number, Pressure, Mathematical analysis.

The present paper attempts the solution of the problem involved in a strong detonation, taking into account the explusion of air by the products of the detonation. The basic assumption consists in the following: the motion of the gaseous masses is given shape by the expansion of the sphere (a spherical piston), the radius of which grows in accordance with the law $Ct^{n \text{ plus } 1/(n \text{ plus } 1)}$ where C and n are constants. (Author)

Birnbaum, W.
THE LIFTING VORTEX SURFACE AS AN AID IN TREATING THE TWO-DIMENSIONAL PROBLEM OF WING THEORY (Die Tragende Wirbelfläche als Hilfsmittel zur Behandlung des Ebenen Problems der Tragflugel-Theorie). [1963] [11p] 2refs
Order from SLA $1.60 63-20149

Trans. of Zeitschrift für Angewandte Mathematik und Mechanik (Germany) 1923, v. 3, no. 4, p. 290-297.

DESCRIPTORS: *Wings, *Lift, *Vortices, *Airfoils, Angle of attack, *Aerodynamic characteristics, Equations, Mathematical analysis.

Brun, E., Jampy, M., and Lecardonnel, R.
THE PHENOMENA OF CONVECTION AT HIGH SPEEDS AND THEIR APPLICATION TO AVIATION. [1963] 26p (figs omitted) 3refs
Order from SLA $2.60 63-18828

Trans. in manuscript of Revue Aéronautique Internationale (France) 1936 [v. 6] no. 19, p. 68-74.

DESCRIPTORS: *Aeronautics, *Convection, Compressible flow, Boundary layer, Aircraft, Velocity, Wind tunnels, De-icing systems, High altitude.

Busemann, A.
PRESSURES ON CONE-SHAPED TIPS MOVING AT SUPERSONIC VELOCITY. [1963] 2p 1ref
Order from SLA $1.10 63-18830

Trans. of Zeitsch[rift] für Angew[andte] Math[ematik] und Mechanik (Germany) 1929, v. 9, no. 6, p. 496-498.

DESCRIPTORS: *Wedges, *Supersonic flow, *Conical bodies, Pressure, Aerodynamics, Analysis, Aerodynamic configurations.

Mel'nikov, A. P.
HIGH SPEED AERODYNAMICS: [FUNDAMENTALS OF THE GAS DYNAMICS OF AIRCRAFTS]: SELECTED CHAPTERS. 20 June 63 [92]p 14 refs. FTD-TT-63-394.
Order from OTS or SLA $8.60 63-23655

Unedited rough draft trans. of mono. Aerodinamika Bol'shikh Skorostei: [Osnovy Gazodinamiki Letatel'nykh Apparatov] Moscow, 1961, chaps. 5-6, p. 94-153.

DESCRIPTORS: *Aerodynamics, *Supersonic flight, Boundary layer, Drag, Aerodynamic heating, Laminar boundary layer, Turbulent boundary layer, Heat transfer, Aerodynamic loading, Wind tunnels, Aerodynamic configurations.

Contents:
Boundary layer, friction resistance, and aerodynamic heating at high flight velocities
Aerodynamic forces.

METALLURGY

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 96 (METALLURGY AND MACHINERY SERIES). 1 Oct 63, 9p. JPRS: 21265.
Order from OTS $0.50 63-31851

Trans. of selected abstracts from Referativnyi Zhurnal. Metallurgiya (USSR) 1963, no. 1; Referativnyi Zhurnal. Mashinostroitel'nye Materialy Konstruktsii i Raschet Detalei Mashin (USSR) 1963, nos. 2, 4.

DESCRIPTORS: *Abstracts, *Metallurgy, *Machines, *China, Semiconductors, Welding, Corrosion resistant alloys, Sintering, Aluminum, Powders, Gears

MINING AND METALLURGY QUARTERLY, 1962, NO. 3 AND 1963, NO. 1: [SELECTED ARTICLES]. 1963, 89p 66refs. PL-480 Int.
Order from OTS $1.00 63-11450-1

Trans. of Rudarsko-Metalurski Zbornik (Yugoslavia) 1962, no. 3, p. 235-243; 1963, no. 1, p. 1-13, 15-31, 33-47, 49-68.

DESCRIPTORS: *Mining engineering, *Metallurgy, Clay minerals, Iron, Oxidation, Steel, Structural parts, Geological survey, Uranium compounds, Dioxides, Sintering, Ion bombardment, Photoengraving, Control.

Contents:
Kaolin preparation with special regard to dewatering and drying, by H. Doehner
On the influence of slight impurities of arsenic and phosphorus upon the oxidation of iron, by F. Vodopivec
Technical and economic results obtained by the utilization of steel supports in mines, by S. Zagoricnik
Impressions of the organization and work of the geological institutions in the USA, by S. Papler
Sintering of uranium dioxide at 900°C to 1350°C, by D. Kolar and V. Marinkovic
Ion-bombardment etching of nuclear materials, by B. Navinsek and others
The legal and technical regulations issued after the proclamation of the mining act, by A. Homan.

PROVISIONAL RECOMMENDATIONS FOR THE USE OF ELECTRICAL RESISTANCE SPOT WELDING IN STEEL CONSTRUCTION. Sep 63.
Order from BISI £6 BISI-3383

Trans. from mono. (report) from Deutscher Ausschuss für Stahlbau (German Committee on Steel Construction) Cologne, May 62.

DESCRIPTORS: Steel, Construction, *Electric welding, *Resistance welding, *Spot welding, Joints, Structural parts.

RUSSIAN METALLURGY AND FUELS, 1962, NO. 6. May 63, 108p.
Order from Scientific Information Consultants Ltd., 661 Finchley Road, London N.W.2 $68.00/year

Trans. (some abridged) of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 3-6, 12-26, 37-42, 61-66, 73-89, 103-111, 125-146, 159-166. Abstracts are included of the articles not translated in full.
###A trans. of p. 103-111 (2 articles) is available from OTS $1.25 in 63-21627, JPRS-18817, 22 Apr 63, 41p.

DESCRIPTORS: *Metallurgy, *Fuels, *Ores (Metal sources), *Coal, *Alloys, *Steel, *Nickel, *Chromium *Titanium, Tin, *Zirconium, *Niobium, *Aluminum, *Tungsten, *Beryllium.

Contents:
Thermodynamics of ferrochromite reduction with hydrogen, by A. N. Morozov and I. A. Novokharskii
Reduction kinetics of iron ore-powdered coal nodules, by I. Yu. Kozhevnikov
Viscosity and electrical conductivity of liquid nickel-carbon alloys, by A. A. Vertman and others
Kinetics of the recrystallization of transformer steel during annealing, by V. E. Kochnov and V. Ya. Gol'dshtein
Nitride inclusions in low-carbon high-chromium steel, by Yu. T. Lukashevich-Duvanova and V. A. Urazova
Effect of niobium and zirconium on the structure of cast austenitic stee, by N. P. Braun and N. I. Matyuschenko
##'Healing' of vacancies during creep as a factor of increasing the high-temperature strength, by V. N. Gulyaev
##Examination of dislocations in cast and deformed poly-crystalline chromium, by D. A. Prokoshkin and others
Susceptibility to failure of nickel under static tensile loading, by I. A. Oding and Yu. P. Liberov
Creep of titanium-tin and titanium-zirconium-tin alloys, by V. V. Glazova and N. N. Kurnakov
Phase equilibrium diagram of titanium-niobium-chromium alloys, by I. I. Shakhova and P. B. Budberg
Creep strength at 700°C of alloys on the base of Ti_6Al compound, by I. I. Kornilov and T. T. Nartova
Stabilisation of β-solid solution in zirconium alloys, by L. A. Petrova
Thermal diffusion in tungsten-beryllium system, by P. M. Arzhanyi and others.

RUSSIAN METALLURGY AND MINING, 1963, NO. 1. Jan/Feb 63, 116p
Order from SIC $15.00, $68.00/year

Trans. (some articles abridged) of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Gornoe Delo, 1963, no. 1, p. 14-17, 41-58, 69-75, 87-90, 97-99, 105-120, 129-175. Abstracts are included of the articles not translated in full.

DESCRIPTORS: *Metallurgy, Metallography, *Mining engineering, *Abstracts, Mechanical working, Slags, Chromium compounds, Titanium compounds, Niobium compounds, Calcium compounds, Carbides, Cyanamides, Copper compounds, Sulfides, Powder metallurgy, Electrical conductance, Ultrasonic radiation, Iron, Steel, Carbon alloys, Graphite, Stainless steel, Rare earth elements, Phosphorus, Separation, Zinc, Boron, Silicides, Eutectics, Titanium alloys, Zirconium alloys, Tin alloys, Hydrogen embrittlement, Fracture (Mechanics)

Contents:
The effect of the roll material and surface finish on some parameters of hot rolling in vacuum, by I. M. Pavlov and others
Viscosity and electrical conductivity of magnesia-silica-alumina melts, by R. A. Lyutikov and L. M. Tsyl'ev
Lower oxides of chromium in slags from alumino-thermal chromium reduction, not in a furnace, by A. S. Dubrovin and L. N. Kusakov
Reduction of oxides of titanium and niobium with calcium carbide and cyanamide, by G. A. Meerson and others
Kinetics of the cuprous sulphide-cuprous oxide reaction, by B. I. Sergin and others
The role of second type distortions in the recrystallization of refractory-metal powder compacts during sintering, by F. N. Alekseeva and others
The temperature dependence of the electrical conductivity of some alloys, by A. M. Koral'kov and D. P. Shashkov
Effect of ultrasonic vibration on the structure of aluminum alloys, by G. I. Eskin and others
Effect of mechanicothermal treatment on some properties of Armco iron, by I. A. Oding and P. V. Zubarev
Curie points of cementite isolated from alloy steels, by R. B. Gershman and others
On the nature of factors accelerating the graphitisation of iron-carbon alloys, by F. K. Tkachenko
Effect of rare-earth metals on the properties of stainless steels, by E. M. Savitskii and others
The effect of silicon on the segregation of phosphorus, and vice versa, in steel and cast iron, by Ya. N. Malinochka and T. V. Egorshina
On the nature of 'rheotropic regression', by A. A. Prednyakov and others
Effect of boron on the yield area in α-iron, by V. A. Gladkovskii and N. A. Karelin
Electrical and thermoelectrical properties of silicides of some transition metals, by V. S. Neshpor and G. V. Samsonov
Contribution to the metallochemistry of titanium, by I. I. Kornilov
Creep of titanium-zirconium-tin alloys, by V. V. Glazova and N. N. Kurnakov
Effect of hydrogen on the tendency to delayed cracking of titanium alloys, by B. S. Krylov and A. S. Mikhailov.

RUSSIAN METALLURGY AND MINING, 1963, NO. 2. Mar/Apr 63, 116p
Order from SIC $68.00/year

Trans. (some abridged) of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Gornoe Delo, 1963, no. 2, p. 9-12, 17-66, 96-99, 104-111, 116-129, 136-152, 169-172. Abstracts are included of the articles not translated in full.

DESCRIPTORS: *Metallurgy, *Mining engineering, Magnesium alloys, Liquid metals, Steel, Desulfurization, Refineries, Thermodynamics, Iron alloys, Castings, Copper, Chromium compounds, Oxides, Aluminium, Grain structures (Metallurgy), Sintering Plasticity, Deformation, Ultrasonic radiation, Titanium alloys, Tin alloys, Zirconium alloys, Minerals, Manganese, Niobium.

Contents:

The reduction of magnesium oxide by silicon in the production of magnesium alloys, by I. V. Ryabchikov and A. S. Mikulinskii
##Reaction of the stream of oxygen with molten pig iron during top blowing in a converter, by E. M. Ogryzkin
##The effect of deoxidation with aluminum on the sulphur content of steel, by S. E. Volkov and A. M. Samarin
Desulphurization of ball-bearing steel in an induction furnace under vacuum, by B. V. Linchevskii
An investigation of the possibility of refining steel with liquid synthetic slags, by G. S. Ershov and S. V. Mikhailikov
Thermodynamics of the interaction of nitrogen with silicon and aluminum in transformer steel, by V. V. Averin and others
Intracrystalline segregation of silicon in cast iron, by A. A. Zhukov
Contribution to the problem of the gas content of anode copper, by V. L. Zyazev and I. N. Tanutrov
Effect of chromium oxides on the viscosity and specific conductivity of silica-magnesia-alumina melts, by R. A. Lyutikov and L. M. Tsylev
Grain refinement of aluminum using transition metals, by L. K. Lamikhov and G. V. Samsonov
Grain refinement in non-eutectic silicon-aluminum alloys, by E. A. Boom
Effect of sintering temperature on the shrinkage and structure of briquettes produced from chromium-nickel steel powders, by R. A. Andrievskii and others
Kinetics of plastic deformation of commercial iron at temperatures from 20 to 1000 C, by T. A. Alekseeva and M. G. Lozinskii
Effect of ultrasonic vibrations on the isothermal breakdown of austenite in KhVG steel, by E. G. Aizentson and L. V. Spivak
Physical properties of alloys in the titanium corner of the ternary titanium-alumium-tin system, by O. P. Elintin and others
Elastic properties of titanium-tin alloys, by S. G. Fedotov and others
Investigation of the creep of α- and β- modifications of titanium-zirconium alloys, by K. A. Osipov and others
An investigation of electrochemical surface properties of tantalite during interaction with flotation reagents, by S. I. Pol'kin and others.
##Other translations of p. 17-20 and 22-27 are available from HB $4.50 as HB-6011 and $6.50 as HB-6012.

Bakhtyarov, R. A.
RELATIONSHIP BETWEEN SHRINKAGE POROSITY IN CASTINGS AND THE ALLOY POSITION OF THE CONSTITUTION DIAGRAM. [Aug 63] 14 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 62-69.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Castings, Porosity, Alloys, Chemical analysis, Phase studies.

Pipe-formation and shrinkage porosity was determined for chill-cast Al-Cu, Al-Si, and Al-Zn alloys of different compositions, and the results compared with the constitutional diagrams of the alloys concerned. The results contradict previous ideas on the subject. (SIC abstract)

Balder, T.
THE INFLUENCE OF THE PELTIER-EFFECT IN RESISTANCE WELDING (De Invloed van het Peltier-Effect bij Weerstandslassen). [1963] [16p] (foreign text included) 5refs
Order from SLA $1.60 63-20048

Trans. of de Ingenieur (Netherlands) 1962, v. 74, no. 48, p. E153-E156.

DESCRIPTORS: *Resistance welding, *Welds, Peltier effect, Electric currents, Thermo-electricity, Tensile properties, Electron tubes.

The influence of the Peltier effect in resistance welding. The strength of a weld of unequal materials made by resistance welding depends on the direction of the welding current. In the contact surface of the weld Peltier heat is created or removed proportional to the current intensity, the temperature and the thermo-electric coefficient. In resistance welding the current intensity is extremely high e. g. 1 million amps cm^2; the temperature is also very high e. g. 1.000°C and the Peltier heat has a perceptable influence. If Peltier heat is created in the contact surface the weld is stronger than if the current direction is reversed and Peltier heat is removed. (Author)

Bosdorf, L.
ANODIC OXIDATION AND NEW PROCESSES IN THIS FIELD. Sep 63.
Order from MT $23.50 MT Trans-313

Trans. of Galvanotechnik (West Germany) 1963, v. 54, no. 2, p. 66-80.

DESCRIPTORS: *Aluminum, *Oxidation *Anodes, Protective treatments, *Reviews, Electrolysis.

Burtsev, V. V. and Raev, Yu. O.
A MECHANISM FOR BLAST DISTRIBUTION BETWEEN THE TUYERES OF A BLAST FURNACE. Sep 63.
Order from MT $3.30 MT Trans-256

Trans. of #Metallurg (USSR) 1962, v. 7, no. 4, p. 9-10.

DESCRIPTORS: *Blast furnaces, Control systems, Blast, Distribution, Nozzles.

Cechura, F. and Tieliczka, L.
EXPERIENCES IN O. H. BATH CARBURISATION BY COKE BREEZE INJECTION. Sep 63.
Order from MT $23.50 MT Trans-317

Trans. of Hutnik (Czechoslovakia) 1963, v. 13, no. 2, p. 53-58.

DESCRIPTORS: *Coke, Powders, Injection, Blowers, Steel, Carbon, Heating, Metals, Melting.

Cernoch, S. and others.
IMPROVEMENTS IN BLAST-FURNACE STOVE THERMAL EFFICIENCY. Sep 63.
Order from MT $30.15 MT Trans-309

Trans. of Hutnicke Listy (Czechoslovakia) 1963, v. 18, no. 3, p. 157-166.

DESCRIPTORS: *Heaters, *Blast furnaces, Gas flow, Model tests.

Chizhikov, D. M. and Korsunskaya, V. N.
PROBLEMS IN CHLORINATION OF TITANIUM-BEARING MATERIALS. [Aug 63] 1 ref.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 74-80.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Titanium compounds, Oxides, *Chlorination, Slags, Chlorine compounds, Chemical reactions, Carbon.

An apparatus is described for studying the reaction between TiO_2, Cl_2, and C to give $TiCl_4$ at temperatures between 600 and 1000°C. The effect of other oxides in the slag, such as FeO, MgO, Al_2O_3, and SiO_2 is studied, together with the effect of carbon concentration, chlorine pressure, temperature, and side-reactions such as $TiCl_3$ formation. (Sic abstract)

Drits, M. E., Sviderskaya, Z. A., and Kuz'mina, V. I.
EFFECT OF ADDITIONS OF IRON, SILICON AND MANGANESE ON THE PROPERTIES OF ALUMINIUM-COPPER-LITHIUM ALLOYS. [Aug 63] 5p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 150-158.

DESCRIPTORS: *Lithium alloys, *Copper alloys, *Aluminum alloys, Additives, Iron, Silicon, Manganese, Tensile properties, Hardness, Photomicrography.

The effects were studied of separate additions of iron, silicon and manganese to Al-Cu-Li alloys containing about 4% Cu and 2% Li. The data given include tensile tests at 200-300°C, hardness measurements, and photomicrographs. (SIC abstract)

Dubin, G. N.
RESIDUAL STRESSES IN SURFACE LAYERS OF DIFFUSION-SATURATED ALLOSY. [Aug 63] 19 refs.
Order from SIC $15.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 103-113.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Steel, Alloys, Metal coatings, *Diffusion, Surfaces, Stresses, *Chromizing, Chemical analysis.

The effect of chromising on residual stresses at the metal surface was determined by selective removal of the surface layers by chemical attack. A number of tests were also carried out with diffusion coatings of Al, Nb, Ti, and B (as FeB). Four different steels were employed. (SIC abstract)

Elfmark, J.
THE FORGEABILITY OF 12% CHROMIUM HEAT-RESISTING STEELS. Sep 63.
Order from MT $24.50 MT Trans-262

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 5, p. 311-318.

DESCRIPTORS: *Heat resistant metals and alloys, *Steel, *Chromium alloys, Forging, Ferrites, Fracture (Mechanics), Mechanical working.

Erdmann, R.
ADHESION STRENGTH OF ELECTROLYTIC DEPOSITS. [1963] [2]p.
Order from SLA $1.10 63-16809

Abstract trans. of Metalloberfläche (West Germany) 1948, v. 2, no. 5/6, p. 117-119 (abstracted in Engineers' Digest (Gt. Brit.) 1949, v. 10, no. 4, p. 116-117).

DESCRIPTORS: *Adhesion, *Electroplating, Steel, Nickel, Iron, Castings, Copper, Brass, Zinc, Lead, Tin, Aluminum, Alloys.

Evstyukhin, A. I., Nikishanov, V. V., and Milov, I. V
DISTRIBUTION OF CARBON AND TUNGSTEN IN COLUMBIUM DURING ITS ZONE REFINING. [Aug 63] 2p
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 98-101.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Niobium, Purification, Carbon, Tungsten, Impurities, Distribution, Zone melting, Mechanical properties.

A study was made of the purification of technical grade columbium containing carbon and tungsten as impurities since these largely determine the mechanical properties of the metal. (SIC abstract)

Feller-Kniepmeier, M. and Pawlek, F.
THE APPLICATION OF ELECTRON DIFFRACTION TO THE ANALYSIS OF ANODE SLIMES. [1963] 5p 6refs
Order from SLA $1.10 63-18516

Trans. of [das] Metall (West Germany) 1963, v. 17, no. 1, p. 35-38.

DESCRIPTORS: Electron diffraction analysis, *Anodes, Chemical compounds, Ores (Metal sources), Recovery.

Anode slimes were studied to find their composition by the method of electron diffraction. It was found that the results obtained by this method are comparable with those obtained by X-rays for which a fractionation by mechanical or chemical means is necessary. The separate elements are combined in different ways, e.g. silver can be present in elementary form but also in compounds with sulfur, selenium and tellurium and in a mixed selenide in which gold is substituted. Copper also occurs in a whole series of compounds. (Author)

Fridlyander, I. N., Romanova, O. A., and Archakova, Z. N.
MECHANICAL PROPERTIES OF HIGH-TEMPERATURE ALUMINUM-LITHIUM-CADMIUM ALLOYS. [Aug 63] 7 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 82-89.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Heat resistant metals and alloys, *Cadmium alloys, *Lithium alloys, *Aluminum alloys, Mechanical properties, Chemical analsysi.

The effect was determined of additions of Mn, Cd, Ti, Fe, Si, and Fe-Si jointly on the mechanical properties of the Al-base Al-Cu-Li alloys at 20°C and at 200°C, in both quenched and aged states. A composition is suggested for an alloy with high strength at 200°C. (SIC abstract)

Funke, V. F. and Yudkovskii, S. I.
STRUCTURE AND PROPERTIES OF THE ALLOYS OF ZIRCONIUM DIBORIDE WITH IRON, COBALT AND NICKEL. [Aug 63] 4p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 126-132.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Zirconium compounds, *Boron compounds, *Iron alloys, *Cobalt alloys, *Nickel alloys, Microstructure, Mechanical properties, Hardness.

The structure of alloys of zirconium diboride (ZrB_2) with iron, cobalt, or nickel was determined by thermal analysis, X-ray examination, and microhardness testing. The bend strength of typical alloys was determined, and the hardness was measured at temperatures up to 1000 °C. (SIC abstract)

Glazov, V. M.
VISCOSITY AND ELECTRICAL CONDUCTIVITY OF LIQUID SILICON. [Aug 63] 20 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 110-116.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Liquid metals, *Silicon, Heat of fusion, Viscosity, *Electrical conductance.

The results of investigations of the viscosity and the electrical conductivity of silicon around fusion point and in the liquid state, using very pure initial materials, are described. (SIC abstract)

Glazov, V. M., Stepanova, M. V., and Chuprakova, M. V.
CONTRIBUTION TO THE PROBLEM OF REACTIONS BETWEEN COMPONENTS DISSOLVED IN TERNARY SOLID SOLUTIONS. [Aug 63] 21 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 58-62.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: Solids, Solutions, *Aluminum alloys, *Copper alloys, Chemical reactions, Magnesium alloys, Silicon alloys, Germanium alloys, Chromium alloys, Zirconium alloys, Nickel alloys, Beryllium alloys.

Glazova, V. V. and Kurnakov, N. N.
CREEP OF TITANIUM-TIN AND TITANIUM-ZIRCONIUM-TIN ALLOYS. [Aug 63] 14 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 131-136.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Tin alloys, *Zirconium alloys, *Titanium alloys, *Creep, Velocity

The resistance of alloys of Ti_3Sn with either Ti or Zr was determined by diamond indentation for varying times (up to 50 min.) at 300 - 700°C. There is a relationship between the values obtained and creep velocity. (SIC abstract)

[Goan'] An'-min', Mchedlishvili, V. A., and Samarin, A. M.
DEOXIDATION OF STEEL WITH COMPLEX ALLOYS OF SILICON, MANGANESE AND ALUMINUM. [Aug 63] 17 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 31-39.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Aluminum alloys, *Manganese alloys, *Silicon alloys, *Steel, Deoxidation, Oxides, Inclusion (Metallurgy), Iron alloys.

Experimental work was carried out on the deoxidation of steel with quaternary Fe-Si-Mn-Al alloys, of various compositions. The efficiency of deoxidation was studied and the amount and composition of the oxide inclusions formed during deoxidation were determined, the oxides being separated electrolytically and examined by chemical analysis, by X-ray analysis, and by optical microscope. (SIC abstract)

Gol'dfarb, E. M. and Legavets, L. V.
OPERATION OF HOT-BLAST STOVES WITH PREHEATED BLAST DILUTION. Sep 63.
Order from MT $10.00 MT Trans-320

Trans. of #Metallurg (USSR) 1963, v. 8, no. 3, p. 3-5. Another trans. is available from HB $3.75 as HB-5777, Mar/Apr 63, 1500 words.

DESCRIPTORS: *Blast furnaces, *Heaters, Oxygen, Operation.

Golev, A. K. and Belyaev, G. S.
IMMISCIBILITY IN LIQUID STATE OF ALLOYS IN CALCIUM-SILICON-IRON SYSTEM. [Aug 63] 8 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 114-115.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Calcium alloys, *Silicon alloys, *Iron alloys, Solubility, Mixtures, Chromium alloys, Chemical analysis, Silicides.

An experimental determination was made of the solubility of Ca in Fe - Si mixtures, and a ternary diagram produced for a temperature of 1600°C. One determination was also carried out on a ferro-chromium mixed with calcium silicide. (SIC abstract)

Gul'tyai, I. I.
EFFECT OF ALUMINA ON THE VISCOSITY OF CALCIUM OXIDE-MAGNESIUM OXIDE-SILICA SLAGS. [Aug 63].
Order from SIC $15.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 52-65.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Slags, Dioxides, *Silicon compounds, *Magnesium compounds, Oxides, *Calcium compounds, *Aluminum compounds, Viscosity.

Detailed results are given for slag viscosity measurements at temperatures up to 1550°C, the slags containing 15-60% CaO, 5-60% SiO_2, 0-25% MgO, and 0-30% Al_2O_3. Diagrams are given showing equal viscosity contours at certain fixed temperatures and fixed Al_2O_3 contents, with varying CaO, SiO_2, and MgO contents. (SIC abstract)

Gur'yanov, V. G.
AUTOMATIC CHARGING OF BLAST FURNACE. Sep 63.
Order from MT $6.00 MT Trans-257

Trans. of #Metallurg (USSR) 1962, v. 7, no. 4, p. 13-14.

DESCRIPTORS: *Blast furnaces, Automatic.

Hadamek, V.
NEW TRENDS IN THE DESIGN OF HOT-BLAST STOVES, Sep 63.
Order from MT $11.90 MT Trans-272

Trans. of Hutnik (Czechoslovakia) 1962, v. 12, no. 1, p. 3-5.

DESCRIPTORS: *Heaters, Design, Blast furnaces.

Il'evskii, I. I. and Kochukov, N. S.
BRAZING OF TITANIUM WITH RAPID HEATING. 14 Oct 63, 10p JPRS: 21437.
Order from OTS $0.50 63-31935

Trans. of #Svarochnoe Proizvodstvo (USSR) 1963, no. 5, p. 21-24.

DESCRIPTORS: *Titanium alloys, *Brazing, *Soldered joints, Mechanical properties, Heating

The problem of the soldering of titanium alloys during rapid heating in salt baths is discussed. The results of tests of the mechanical properties of the soldered joints depending on the influence of the thermal cycle of soldering are presented. (Author)

Ivanov, V. I.
EFFECT OF THE DEGREE OF DEFORMATION ON RECRYSTALLIZATION KINETICS AND GRAIN SIZE OF RAPIDLY HEATED TITANIUM. [Aug 63] 4p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 63-70.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Titanium, *Recrystallization, Deformation, Grain structures (Metallurgy), Heating, Reaction kinetics.

The effect of degree of deformation and heating rate on the recrystallization of technical titanium were determined by means of microscopical examination, hardness determinations, and X-ray analysis. Graphs showing the results are given. (SIC abstract)

Kaplan, G. E., Machinskii, A. V. and others.
EFFECTS OF ULTRAFINE GRINDING ON THE COURSE OF SOLID STATE REACTIONS. [1963] 10p. (figs. omitted) 22 refs.
Order from OTS or SLA $1.10 63-18300

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1963, v. 36 [no. 1] p. 95-101.

DESCRIPTORS: *Powder metallurgy, *Sintering, Particle size, *Phase studies, Solids, Mass transfer, Reaction kinetics, Thermodynamics.

The processes of sintering, utilized chiefly in the technology of rare and non-ferrous metals, are based obviously on a mass transfer in the solid, liquid or gaseous phase; with a prevalence of the liquid and gaseous states as agents of transfer during the decomposition and exchange of the materials. Of especial interest is the investigation of the sintering processes of ultrafinely ground materials (average grain size from one to a few microns) followed by a careful mixing of the constituents. In such a case a practically complete decomposition of the materials can be obtained, usually at temperatures significantly lower than those used in sintering under normal conditions. The resulting product is in the form of a small grained, loose mass; which opens up possibilities of utilizing the sintering processes in an automatized and continuously operating apparatus. The sintering processes of ultrafinely ground materials (ores or other pure compounds) are of high interest, not the least because the detailed investigation of these might be a very important link in the scientific clarification of the complicated mechanisms of solid phase reactions. (Author)

Kappius, F.
MODERN COILER DRIVES IN COLD STRIP ROLLING MILLS. Sep 63.
Order from BISI £4 5s BISI-3235

Trans. of Blech (West Germany) 1963, v. 10 [no. 2] p. 75-80.

DESCRIPTORS: *Rolling mills, Drives, Direct current, *Power drive components, Control.

Kishinovskii, V. B. and Grigorovich, V. K.
HEAT-RESISTANCE OF ZIRCONIUM-NIOBIUM ALLOYS. [Aug 63] 7 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 135-138.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Heat resistant metals and alloys, *Niobium alloys, *Zirconium alloys, *Creep, Tensile properties, Hardness.

Creep tests, tensile tests, and hardness determinations were carried out at elevated temperatures on zirconium and Zr-Nb alloys containing up to 35% (at.) Nb. The data obtained were correlated with the equilibrium diagram. (SIC abstract)

Kogan, R. L.
STUDY OF CURVES IN FATIGUE-FAILURE DIAGRAMS. [Aug 63] 5 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 78-80.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Fatigue (Mechanics), *Failure (Mechanics), Hardness, Iron, Melting, Mathematical prediction, Metals.

The variation of hardness of Armco iron during fatigue tests by alternating bending was studied, and it is shown that the behaviour of metals in fatigue can be predicted from the hardness measurements for small smooth test pieces. The similarity between fatigue failure and melting is used to calculate fatigue constants. (SIC abstract)

Kolmogorov, V. L. and Gleiberg, A. Z.
STUDY OF WALL DEFORMATION DURING THE HOT REDUCING OF TUBES, 18 Nov 59 [11p] 5refs
TIL Trans. no. 1527; BISI Trans. no. 1481; [DSIR] NLL M. 4878.
Order from OTS or SLA $1.60 62-25327

Trans. of Stal' (USSR) 1959 [v. 19] Rolling and Tube Manufacture Suppl, p. 171-179.

DESCRIPTORS: *Pipes, Heat treatment, *Steel, Plasticity, Walls, Deformation.

For abstract see Technical Translations 3: 316, 1960.

Kolomytsev, P. T.
CREEP FAILURE OF HEAT-RESISTANT ALLOYS. [Aug 63] 17 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 128-134.
Also available from SIC in Russian Metallurgy and Fuels 1962, no. 5, $68.00/year.

DESCRIPTORS: *Heat resistant metals and alloys, Creep, Failure (Mechanics).

Experimental data obtained from creep tests on gas turbine blade alloy are discussed, particularly with regard to temperature, time in service before test, surface finish (polished or electrolytically deoxidised), stress, and heat-treatment. (SIC abstract)

Kornilov, I. I. and Yakimova, A. M.
CREEP AND STRUCTURE OF ALLOYS IN THE TITANIUM-OXYGEN-HYDROGEN AND TITANIUM-ALUMINIUM-HYDROGEN SYSTEMS. [Aug 63] 6 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnich eskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 88-93.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Titanium alloys, *Aluminum alloys, Hydrogen, Oxygen, Creep, Microstructure.

The effect of additions of H and O on the creep properties of Ti was determined. The effect of O and Al on the solubility of H in Ti was also investigated, and correlated with the creep test results. Microstructures and graphs of creep tests are given. (SIC abstract)

Kornilov, I. I. and Nartova, T. T.
CREEP STRENGTH AT 700°C OF ALLOYS ON THE BASE OF Ti_6Al COMPOUND. [Aug 63] 19 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tedelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 142-146.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Titanium alloys, *Aluminum alloys, *Heat resistant metals and alloys, *Creep, Mechanical properties

Titanium alloys of composition approximating to Ti_6Al are shown to have outstanding creep strength at temperatures up to 700°C, being superior to austenitic steels. The results can be explained theoretically. (SIC abstract)

Kreimer, G. S., Alekseeva, N. A., and Baranov, A. I.
CREEP OF SOLID TUNGSTEN CARBIDE-COBALT HARD ALLOYS. [Aug 63] 9 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 163-166.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Cobalt alloys, *Carbides, *Tungsten compounds, Hardness, Solids, Creep, Cermets.

The creep of the VK^6 cermet (94% WC, 6% Co) at 800 °C under a centrally-applied bending load, was studied on specimens 5 x 5 x 35 mm. (SIC abstract)

Kreimer, G. S. and Safonova, O. S.
EFFECT OF COOLING RATE IN SINTERING AND THERMAL TREATMENT PROCESSES ON THE PROPERTIES OF HARD TUNGSTEN CARBIDE-COBALT ALLOYS. [Aug 63] 5 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 94-97.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Tungsten compounds, *Carbides, *Cobalt alloys, Sintering, Heat treatment, Microanalysis, Test methods.

The effects of heating sintered WC-Co alloys, and of the rate of cooling after heating, were studied by microscopical examination and by mechanical tests (tensile, impact, and hardness). (SIC abstract)

Krivoi, Ts. P. [Treister, Yu. Ya., and Sherman, E. M.]
AUTOMATIC CONTROL OF BLAST DISTRIBUTION BETWEEN THE TUYERES OF A BLAST FURNACE. Sep 63.
Order from MT $7.50 MT Trans-249

Trans. of #Metallurg (USSR) 1962, v. 7, no. 2, p. 6-8.

DESCRIPTORS: *Blast furnaces, Computers, Control, Automatic, Blast, Distribution, *Control systems, Nozzles.

Kulik, A. I., Rogach, A. P., Salganik, L. D. and others.
THE USE OF HIGH-ALUMINA BRICKS IN HOT-BLAST STOVES (Primenenie Vysokoglinozemistogo Kirpicha v Vozdukhonagrevatelyakh) tr. by R. Sewell. Oct 56 [8p] R. D. D. Trans. no. 4283; [BISI] Trans. no. 551; [DSIR] NLL M. 4149.
Available on loan from OTS 62-24156

Abridged trans. of Stal' (USSR) 1956 [v. 16] no. 7, p. 582-[585].

DESCRIPTORS: *Heaters, Air blast, Heat, *Brick, Oxides, Aluminum compounds, Life expectancy, Blast furnaces.

The use of high alumina brick in hot blast stoves increases the life of the dome and the checkers and enables the working temperature of the dome to be considerably increased. With a view to making cheaper the production of alumina brick the content of alumina can be limited to 48%. Satisfactory results are obtained with an increase in the alumina content of the brick up to 48% which still does not give rise to any marked increase in the life of the refractories. (Author)

Kulikov, I. S.
THERMODYNAMIC INVESTIGATION OF THE BEHAVIOUR OF SULPHUR IN OPEN-HEARTH FURNACE GASES. [Aug 63] 5p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 20-30.

DESCRIPTORS: Gases, Open hearth furnaces, *Sulfur, *Thermodynamics, Steel, Liquid metals, Slags, Melting, Fuel oil.

A thermodynamic analysis is made of the distribution of sulphur between the liquid steel, the slag, and the gas phase, assuming that near-equilibrium conditions apply. The conclusions are applied to open-hearth melting using oil fuel. (SIC abstract)

Kunii, Kazuo and others.
ON THE REMOVAL OF ZINC IN DUST FROM AN OPEN HEARTH FURNACE BY REDUCING EVAPORATION. Pt. 3 of Research on the Treatment of the Iron Industry Dust. Jul 63 [6p] 6refs
Order from SLA $1.10 63-20072

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 452-453.

DESCRIPTORS: *Dusts, Iron industry, *Zinc compounds, Oxides, Separation, Open hearth furnaces, Evaporation, Reduction (Chemistry), Charcoal.

As a method of Zn removal from the open hearth furnace dust, charcoal was used as a reducing agent. At a roast-temperature of 1200°C, with 10% charcoal, the Zn removal reached 77% and at the same time, the increase in reduction of Pb and amount of Fe was determined. This method, in contrast to the chlorinating roasting method previously reported, is economical, but the product of zinc removal, ZnO, adheres on the wall of the container (in this case, the crucible) and such material deposited on the crucible may be mixed with the constituents. In order to prevent this, one should either make the roasting atmosphere anti-oxidizing, or absorb all the fume of zinc oxide. This is experimentally very important and this subject will be discussed in the next report. (Author) (See also 63-20071)

Kurochkina, L. A., Grigoryan, V. A., and Zhukhovitskii, A. A.
DIFFUSION OF CARBON IN CEMENTITE DURING GRAPHITIZATION. [Aug 63] 4refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 78-81.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Carbon, *Diffusion, Heat treatment, Radioactive isotopes, Annealing, Chemical analysis, Graphite.

The diffusion of carbon into cementite was determined at temperatures between 925° and 1160°C using radioactive C^{14}, with or without preliminary annealing. Graphs are given showing the effect of temperature on the diffusion coefficient. (SIC abstract)

Loginov, V. I. [Chechuro, A. N., and Dolgov, V. M.].
OXYGEN INJECTION DEEP INTO THE HEARTH OF A BLAST FURNACE. Sep 63.
Order from MT $15.00 MT Trans-318

Trans. of #Metallurg (USSR) 1962, v. 7, no. 12, p. 4-8.

DESCRIPTORS: *Blast furnaces, *Oxygen, Injection, Opean hearth furnaces.

Matsuura, Minoru and Kunii, Kazuo.
PROCESS OF ZINC REMOVAL FROM OPEN HEARTH FURNACE DUST. Pt. 4 of Research on the Treatment of the Iron Industry Dust. Jul 63 [6p] 1ref
Order from SLA $1.10 63-20070

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 453-455.

DESCRIPTORS: *Dusts, Iron industry, Open hearth furnaces, *Zinc compounds, Oxides, Separation, Pellets, Coke, Rotary furnaces.

In this method of removing Zn from open hearth furnace dust, a product of semi-reduced Luppen of about 60% total iron (40% metallic Fe), Zn < 3.0%; and its by-products (about 85% of zinc oxide) were obtained. This zinc oxide may be effectively utilized and therefore, it is well justified budget-wise. An important reason for the success of this method was the use of the rotating furnace. In other words, by moving the pellets during roasting, the pellets were prevented from agglomerating. Also, circulation of air through the roasting layers was quite effective; and finally, because of short length of the furnace, the exhaust-air was removed at high temperature, and Zn oxides, which are the product of Zn removal, were quite effectively carried off. (Author) (See also 63-20072)

Messager, Christian and Herzog, Eugène.
ON THE POSSIBILITY OF MAKING ROLLABLE ALLOYS OF Fe-Al BY DIFFUSION OF ALUMINUM IN IRON ALLOYS. [July 63] [5]p. 1 ref.
Order from SLA $1.10 63-18910

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1962, v. 254, p. 2978-2979 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Iron alloys, *Aluminum alloys, Diffusion, Steel, Rolling mills, Hot working, Recrystallization, Mechanical properties.

Mikheev, V. S. and Chernova, T. S.
EFFECT OF ALUMINUM ON THE MECHANICAL PROPERTIES OF TITANIUM ALLOYS. [Aug 63] 8 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 139-142.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Titanium alloys, Mechanical properties, *Aluminum alloys, Additives.

The effect was studied of adding up to 15% of Al to Ti, and to a Ti-Cr-Fe-Si alloy with (Cr + Fe + Si) = 1.6%, on the tensile properties and impact strength of the alloys. The results are given in tables and graphs. (SIC abstract)

Moiseev, V. N.
THE THERMAL TREATMENT AND MECHANICAL PROPERTIES OF ALLOYS OF THE SYSTEM Ti-Mo-Al. [1963] [6]p. [DSIR] NLL M. 10081.
Order from OTS or SLA $1.10 63-23357

Trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1962, no. 4, p. 36-40.

DESCRIPTORS: *Aluminum alloys, *Molybdenum alloys, *Titanium alloys, Mechanical properties, Heat treatment, Annealing, Tensile properties, Ductility, *Welding.

A study was made of the properties prepared with a total content of molybdenum and aluminum of up to 9% with Mo-Al ratio of 3:1, 1:1, and 1:3, and also binary alloys of Ti with Mo and Ti with Al. Unalloyed titanium is included in the investigation for purposes of comparison. The alloys of Ti-Mo-Al most interesting are those which contain 2·0-3·5 per cent Mo and 2-2·5 per cent Al, and also those with 6 to 8 per cent Mo and up to 3 per cent Al. These alloys have a good ductility and a satisfactory weldability, and are effectively strengthened by thermal treatment. The alloys of the first group may be thermally strengthened up to 115 to 125 kg./mm, and those of the second group up to 140 to 160 kg./mm.

Mozorov, A. N. and Novokharskii, I. A.
THERMODYNAMICS OF FERROCHROMITE REDUCTION WITH HYDROGEN. [Aug 63] 10 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 3-6.
Also available from SIC in Russian Metallurgy and Fuels Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Iron alloys, *Chromite, *Chromium compounds, Oxides, Ores (Metal sources), Thermodynamics, Hydrogen, Reduction (Chemistry),

The thermodynamics of the reaction between $FeCr_2O_4$ and H_2 to give Fe and Cr_2O_3 was studied both by reduct on with H_2, and by oxidation of the reduced ore with steam. The equilibrium constant, free energy change, heat of reaction, and dissociation pressure are calculated, and equations are given for calculating these constants at different temperatures. (SIC abstract)

Orlov, V. I., Esin, O. A., Shurygin, P. M., and Sherstobitov, M. A.
INVESTIGATION OF THE PROCESSES OF INTERACTION OF CHROMIUM OXIDE WITH SILICON, MANGANESE AND IRON BY THE ELECTROMOTIVE FORCE METHOD (Issledovanie Protsessov Vzaimodeistviya Okisi Khroma s Kremniem, Margantsem i Zhelezom Metodom Elektrodvizhushchikh Sil). [1963] [26p] (foreign text included) 22refs
Order from OTS or SLA $2.60 63-13584

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 5, p. 28-36.

DESCRIPTORS: Metallurgy, *Chromium compounds, Oxides, *Silicon compounds, *Manganese compounds, *Iron compounds, Alloys, Steel, Slags, Thermodynamics, Electrochemistry, Reduction (Chemistry).

A method was worked out, and measurements were conducted with it of the electromotive forces which are present in the reactions where chromium (III) oxide reacts with silicon, manganese, and iron at 1400° C. It was established that in the corresponding galvanic chains the electromotive forces change clearly with the activity of the components both in the metallic state (Si, Mn, Fe) and in the slag phase (SiO_2, FeO), which were obtained according to known electrochemical formulas. It was found that the values found this way of the standard changes of the isobaric reaction potentials are much closer to the thermodynamically calculated ones (which are based upon data for the dissociation of the oxides) than they are to the ones obtained earlier on the base of the method of chemical equilibrium. (Author)

Pant, P.
USE OF GASEOUS OXYGEN TO REDUCE THE CARBON CONTENT OF HIGH-ALLOY CHROMIUM AND CHROMIUM-NICKEL STEELS. Sep 63.
Order from MT $25.80 MT Trans-326

Trans. of Slevarenstvi (Czechoslovakia) 1963, v. 11, no. 4, p. 144-149.

DESCRIPTORS: *Steel, Nickel alloys, Chromium alloys, Carbon, Reduction (Chemistry), Oxygen, Gases.

Pavlov, I. M.
ON THE BASIC PROBLEMS IN ROLLING TECHNOLOGY. [Aug 63] 2p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 3-9.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Rolling mills, Machine tools, Machines, Mechanical working, Automation.

An outline is given of the directions in which rolling technology could be improved, e. g. new processes, new metals and products, increased output, automation and mechanization, improved quality, and scientific study of the rolling operation. (SIC abstract)

Penzimonzh, I. I. and Kozhakhmetov, S. M.
SMELTING OF POLYMETALLIC ORES AND CONCENTRATES BY SUSPENSION IN A STREAM OF OXYGEN [Aug 63] 10 refs
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 44-50.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Fluidized solids, *Ores (Metal sources), Smelting, Slags, Dusts, Impurities, Recovery.

Laboratory tests were carried out on a Cu-Pb concentrate and a Cu-Pb-Zn ore containing about 40% of Fe. The experimental fluidised bed apparatus is described,

and the results are given including the slag and dust losses. The recovery of important impurities such as Se, Te, Re, In, and Ta, is discussed. (SIC abstract)

Petrova, L. A.
STABILISATION OF β-SOLID SOLUTION IN ZIRCONIUM ALLOYS. [Aug 63] 2p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 159-161.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Zirconium alloys, *Niobium, *Molybdenum, Additives, Stabilization, Solids, Solutions, Microscopy, X-rays.

Microscopical and X-ray analysis of binary Zr alloys showed that only Nb or Mo additions act as stabilisers. (SIC abstract)

Pokhvisnev, A. A. [Tarasov, V. P., and Tarasov, F. P.]
A CHARGING DEVICE WITH TWO BIG BELLS. Sep 63.
Order from MT $7.50 MT Trans-250

Trans. of #Metallurg (USSR) 1962, v. 7, no. 2, p. 9-11.

DESCRIPTORS: *Blast furnaces, Industrial equipment, Design, Operation

Proske, M., Hoffmann, M., and Marx, H. J.
RECENT OPERATIONAL INVESTIGATIONS ON THE MAIN DRIVES OF INGOT COGGING MILLS, I-III Sep 63.
Order from BISI £7 10s BISI-3349, pts, I-III

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 12] p. 702-715.

DESCRIPTORS: *Castings, *Rolling mills, *Drive shafts, Torque, Computers, Statistical analysis, Food distribution, *Drives.

Contents:
Measurement of the principle electrical and mechanical values of a main drive
Determination of shaft torque by electronic computer
Results of long-term investigations on a main drive

Romanenko, V. N. and Nikitina, G. V.
HOMOGENIZATION OF CRYSTALS IN BINARY SYSTEMS BY A "SELF-FEEDING MELT" METHOD. [Aug 63] 4 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 56-57.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Crystals, Semiconductors, Germanium alloys, Silicon alloys, Solids, Solutions, Melting, Preparation.

The self-feeding melt method of preparation homogeneous crystals of e.g. Ge-Si, is described, and is shown to be satisfactory for certain semiconductor solid-solution alloys. A second method combines the melting-out and the Bridgeman methods. (SIC abstract)

Samsonov, G. V. and Latysheva, V. P.
A STUDY OF THE DIFFUSION OF BORON AND CARBON IN SOME TRANSITION METALS. 24 Jan 58 [17p] 14refs GRC/T. 201; [BISI] Trans. 627; [DSIR] NLL M. 4137.
Order from OTS or SLA $1.60 62-24144

Trans. of Fizika Metallov i Metallovedenie (USSR) 1956, v. 2, no. 2, p. 309-319.

DESCRIPTORS: *Transition elements, *Carbon, *Boron, *Diffusion, Carbides, Borides, Heat of activation.

DESCRIPTORS: *Transition elements, *Carbon, *Boron, *Diffusion, Carbides, Borides, Heat of activation.

The diffusion of boron and carbon has been studied in Ti, Zr, Nb, Ta, Mo and W, between 800°C and 2000°C. In all cases, the boride or carbide of the metal is formed. From the data, the heats of activation of diffusion and the diffusion constant-temperature curves have been calculated. These values are compared with other physical constants of the metals, borides and carbides. (Translator)

Shakhova, K. I. and Budberg, P. B.
PHASE EQUILIBRIUM DIAGRAM OF TITANIUM-NIOBIUM-CHROMIUM ALLOYS. [Aug 63] 4refs
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 137-141.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year

DESCRIPTORS: *Heat resistant metals and alloys, *Chromium alloys, *Niobium alloys, *Titanium alloys, Phase studies, Thermodynamics, Quenching (Cooling), High temperature research

An examination has been made of the region of the ternary Ti-Nb-Cr system which was thought most promising for the development of high-temperature alloys, using microscopical examination and X-ray analysis of quenched alloys. Ternary diagrams are given for 600, 800 and 1000°C. (SIC abstract)

Shalimov, A. G. and Kuklev, V. G.
VISCOSITY OF LIME-ALUMINA SLAGS. [Aug 63] 4p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 43-51.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Slags, *Aluminum compounds, Oxides, *Calcium compounds, Viscosity.

Synthetic slags containing 41-56% CaO, 35-50% Al_2O_3, 0-18% SiO_2, 0-15% MgO, 0-12% TiO_2, and 0-9% Cr_2O_3, were made up, and viscosity measurements were made at temperatures up to 1700°C. Equations are given for calculating the viscosity at any temperature of some typical slags. (SIC abstract)

Simose, Takaaki and others.
ON THE REMOVAL OF ZINC IN DUST FROM AN OPEN HEARTH FURNACE BY CHLORINATING ROASTING. Pt. 2 of Research on the Treatment of the Iron Industry Dust. Jul 63 [6p] 3refs
Order from SLA $1.10 63-20071

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 286-288.

DESCRIPTORS: *Dusts, Iron industry, Open hearth furnaces, Separation, Calcium compounds, Chlorides, Magnesium compounds, Reduction (Chemistry), Charcoal, Smelting, *Zinc compounds.

An experiment was performed to remove zinc in open hearth furnace dust by chlorinating roasting with the use of calcium chloride and magnesium chloride. With the use of calcium chloride, the Zn removal increased from 17.0 to 60.7% as the roasting temperature increased from 900°C to 1200°C. When charcoal was also used, the Zn removal was greater. At 1200°C the Zn removal using calcium chloride and 10% charcoal was about 95%. With the use of magnesium chloride, for the roasting temperature between 400°C and 1000°C, the Zn removal increased slowly with the temperature increase. Above 1000°C the Zn removal did not change and remained almost constant at 50%. As a reducing agent, calcium chloride was more effective than magnesium chloride; and with the use of charcoal, the Zn removal became more effective. Removal of Pb from the dust can be effectively (more than 90%) done by roasting the dust at a temperature higher than 1000°C. (Author)

Skorokhod, V. V. and Fedorchenko, I. M.
ON THE CONDUCTIVITY OF DISPERSE MIXTURES WITH IMPERFECT CONTACT BETWEEN THE PARTICLES (Pro Providnist' Dispersnykh Sumishei z Nedoskonalimy Kontaktami mizh Chastinkami). [1962] [9]p. (foreign text included) 5 refs.
Order from OTS or SLA $1.10 62-16734

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1959, no. 7, p. 756-759.

DESCRIPTORS: *Conductivity, *Metallography, Electrical conductance

A method is preposed for calculating the conductivity of statistical disperse mixtures with imperfect contact between the particles. For the derivation there was employed the formula of the theory of electrical contacts of R. Holm and the analogy between contact resistance and the resistance of a thin poorly-conducting film. The method is valid for mixtures with any concentration and any number of phases. As an example there is presented the calculation of the conductivity of one-component pressings with employment of the experimental values of the porosity and of the pressure of pressing. The results of the experimental measurements of the conductivity of the pressings are in good agreement with the calculations.

Smrha, L. and Brodsky, I.
THE EFFECT OF VARIOUS ACTIVATORS ON THE REACTIVITY OF EXOTHERMIC MIXTURES OF THE NON-THERMIT TYPE. Sep 63.
Order from MT $16.15 MT Trans-239

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 2, p. 111-114.

DESCRIPTORS: *Aluminum, *Combustion, *Catalysts, Oxygen, Mixtures, Ignition, Fluorides, Oxides, Reduction.

Smrha, L. and Chvoika, J.
PROBLEMS OF THE USE OF EXOTHERMIC MIXTURES. Sep 63.
Order from MT $23.00 MT Trans-269

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 7, p. 472-479.

DESCRIPTORS: *Powders, *Aluminum, Steel industry, Castings, Mixtures, Heating, *Powder metals.

Sokolov, O. K.
ELECTRICAL CONDUCTIVITY OF MOLTEN SALTS WITH A MONOVALENT CATION. [Aug 63] 2p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 56-58.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year

DESCRIPTORS: *Fused materials, *Electrical conductance, Ions, Salts.

The author shows that theoretically the variation in electrical conductivity of fused salts with univalent cations is related to the volume change produced by the change in temperature. A table comparing the calculated and experimental measured results shows poor agreement. (SIC abstract)

Szantho, Eugen von.
THE INFLUENCE OF SURFACE-ACTIVE SUBSTANCES ON FINE-GRINDING. [1963] 10p (figs. omitted) 13refs
Order from SLA $1.10 63-18557

Trans. of Zeitschrift fur Erzbergbau und Metallhüttenwesen (West Germany) 1949, v. 2, p. 353-360.

DESCRIPTORS: *Surface-active substances, *Material forming, Ores (Metal sources), Ores (Non-metallic), Milling machines, Lubrication, Flotation.

Topics include: the significance of grinding in industry; theoretical considerations about the grinding process; investigations on the influence of interfacial energy with grinding and similar processes; characteristic grinding tests with the addition of surface-active agents; grinding result and lubricating effect of addition agents; and, outlook.

Teterin, P. K.
SECONDARY CONDITIONS OF AXIAL ENGAGEMENT IN OBLIQUE ROLLING. 11 Nov 59 [9p] 8refs TIL Trans. no. 1526; BISI Trans. no. 1480; [DSIR] NLL M. 4877.
Order from OTS or SLA $1.10 62-25325

Trans. of Stal' (USSR) 1959 [v. 19] Rolling and Tube Manufacture Suppl, p. 133-138.

DESCRIPTORS: *Rolling mills, Friction, Deformation, Cavitation.

For abstract see Technical Translations 3: 171, 1960.

Thomas, Hans.
ON RESISTANCE ALLOYS. [1963] 16p. (figs omitted) 23refs
Order from SLA $1.60 63-20274

Trans. of Zeitschrift für Physik (West Germany) 1951, v. 129, p. 219-232.

DESCRIPTORS: *Alloys, Crystals, Transition elements, Heat treatment, *Resistance (Electrical), Deformation, *Heat resistant metals and alloys

A series of alloys consisting of primary mixed crystals and containing at least one transition metal as a component exhibits as a particularity that the resistance-temperature curve is curved S-form and that the resistance in the soft and in the hard state is increased by heating treatment at low temperatures and decreased by cold formation. This behavior can be attributed to the fact that at low temperatures there develops a very particular state which manifests itself in increased electroresistance and is destroyed by a deformation below the temperature of its maximal formation velocity. The measurements enable a division of the resistance-temperature curve into a line ascending uniformly with rising temperature and a second curve to which the state in question is assigned. They enable further conclusions on some noteworthy characteristics of the state whose nature is still unknown. (Author)

Tselikov, A. I.
THE EFFECT OF THE OUTER EDGES ON WIDENING AND THE SPEED AND STRESS DISTRIBUTION ACROSS THE WIDTH OF ROLLED PLATE. 23 Sep 57 [19p] 9refs GRC/T-200; [BISI] Trans. 632; [DSIR] NLL M. 4133.
Order from OTS or SLA $1.60 62-24140

Trans. of mono. Problemy Metallurgii, ed by A. N. Samarin, Moscow, 1953, p. 329-406.

DESCRIPTORS: *Metal plates, *Rolling mills, Tensile properties, Stresses, Plasticity, Deformation, Mechanical working.

Tensile stresses are set up in the outer edges of rolled plate so that in these zones plastic deformation commences before the plate enters the rolls and continues after it has left them. The effect of the tensile stresses is shown by two calculations: in the first their presence is ignored and in the second they are taken into account. The effect is a reduction in the degree of widening-the plate becomes longer and narrower - and the speed and stress distribution are less non-uniform. (Translator)

Tylkina, M. A., Povarova, K. B., and Savitskii, E. M.
RECRYSTALLIZATION AND MECHANICAL PROPERTIES OF TUNGSTEN-MOLYBDENUM-RHENIUM ALLOYS. [Aug 63] 7 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 181-186.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Rhenium alloys, *Molybdenum alloys, *Tungsten alloys, Heat resistant metals and alloys, Mechanical properties, *Recrystallization.

Owing to the cost of high rhenium alloys, tests were made on alloys containing 22-40% Re, 11.5-20.5% Mo and 32.5-66% W. These were deformed and annealed, and recrystallisation temperature determined by hardness measurements, grain size determinations, and tensile tests. Tensile tests were also carried out at 1500°C and 1800°C: at 1800°C the tensile strength of the alloys was 8-12 kg/mm^2. (SIC abstract)

Ul'yanov, K. A., Tarasov, N. D., and Kovtun, S. F.
VACUUM CLADDING OF REFRACTORY METALS. 27 Sep 63, 4p, 8refs JPRS: 21244.
Order from OTS $0.50 63-31840

Trans. of #Tsvetnye Metally (USSR) 1963 [v. 36] no. 3, p. 74-76.

DESCRIPTORS: *Heat resistant metal and alloys, *Cladding, Vacuum apparatus, Hot working, Microstructure, Hardness, Mechanical properties, Niobium, Molybdenum, Tantalum, Stainless steel, Nickel alloys, Chromium alloys, Zirconium, Steel, Iron, Alloys

Joint rolling of similar metals using the vacuum rolling mill with reductions of 30-40% leads to their complete welding. Recrystallization occurs at the site of contact, with the disappearance of the deformation texture, and the strength of cohesion approaches the strength of bonded metals. In the case of dissimilar metals, the structure of contact zone and the strength of cohesion depends on the character of the interaction between the metals and are determined by the phase diagram. The highest strength of cohesion of the coating with the protected metal is achieved when they form mutual solid solutions. The cladding of niobium, molybdenum, and tantalum was experimentally investigated. Stainless steel 1kh18ngt, nichrome, the high-temperature chromium-nickel alloy EI 602, and zirconium were used as the coating. The microstructure, microhardness, and strength of cohesion was determined.

Vatolin, N. A. and Kisling, R.
RADIOGRAPHIC INVESTIGATION OF PSEUDOTERNARY WC-TiC-TaC AND PSEUDOQUATERNARY WC-TiC-TaC-NbC SYSTEMS. [Aug 63] 2p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR, O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 102-106.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: Radiography, Alloys, *Carbides, *Niobium compounds, *Titanium compounds, *Tantalum compounds, *Tungsten compounds, Phase studies.

The effect of the addition of 20% NbC to the equilibrium diagram of WC-TiC-TaC was studied at 1420° and 1600°. A table of the results, and diagrams, are given. (SIC abstract)

Vertman, A. A., Samarin, A. M., and Filippov, E. S.
VISCOSITY AND ELECTRICAL CONDUCTIVITY OF LIQUID NICKEL-CARBON ALLOYS. [Aug 63] 9 refs
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 37-42.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Liquid metals, *Nickel alloys, *Carbon alloys, Viscosity, *Electrical conductance.

The viscosity and electrical conductivity of iron-carbon alloys was measured at temperatures up to 1650 °C. Both show minima at the eutectic composition. The theoretical significance of the results is discussed. (SIC abstract)

Volkov, S. E. and Samarin, A. M.
EFFECT OF STEEL DEOXIDATION WITH SILICON ON DESULPHURIZATION. [Aug 63] 5 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 20-26.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Desulfurization, *Silicon, *Deoxidation, *Steel, Slags, Carbon, Iron, Chemical analysis.

A paper describing experimental work on the effect of deoxidation with silicon on the subsequent desulphurization by means of a lime-based slag. The effect of the carbon content of the steel, and the iron content of the slag were also studied, together with the effect of desulphurization temperature. The mechanism of the desulphurization is discussed in the light of the experiments. (SIC abstract)

Zakharov, E. K. and Livshits, B. G.
PHASE COMPOSITION DIAGRAM OF THE COBALT-CHROMIUM-TITANIUM TERNARY SYSTEM. [Aug 63] 17 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 143-150.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Titanium alloys, *Chromium alloys, *Cobalt alloys, Heat resistant metals and alloys, Phase studies, Chemical equilibrium.

The Co-Ti and Co-Cr systems are discussed, and ternary diagrams for the Co-Cr-Ti system (particularly the Co-rich corner) are given based on thermal analysis X-ray analysis, magnetic measurements and dilatometry. (SIC abstract)

Zasimchuk, E. E., Kurdyumov, G. V., and Larikov, L. N.
EFFECT OF ALUMINIUM AND TITANIUM ON THE LINEAR GROWTH VELOCITY OF RECRYSTALLISATION CENTRES IN DEFORMED NICKEL AND NICHROME. [Aug 63] 6 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 85-87.
Another trans. is available from STS $4.90 as STS-Z-6222, 1962, 3p.; also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Nickel, Deformation, *Recrystallization, Additives, Aluminum, Titanium, Quenching (Cooling), Annealing, Velocity, Crystal growth.

The effect of additions of Al and Ti on the recrystallisation of nickel and nichrome (19-20% Cr) was studied, The specimens being quenched, deformed, and annealed at various temperatures for various times. (SIC abstract)

Ferrous Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 143. 21 Aug 63, 29p.
JPRS: 20756.
Order from OTS $1.00 63-31594

Trans. of Sqvety Deputatov Trudyashchikhsya (USSR) 1963, no. 5, p. 71 and 10 selected articles from 1963 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Steel tubing, Steel, Wire, Rolling mills, Automation, Pipes, Metal coatings, Iron alloys, Castings, Smelting, *Conferences, Industrial plants, Iron, Ores (Metal sources), Construction, Industrial equipment, Procurement.

Contents:
Two more tubing mills in operation at Khartsyzsk
"250" Wire mill placed in operation at Makeevka
Activation of new "2800" rolling mill at Zaporozhstal' plant
Capacity and operation of new single-design automatic blooming mill put into operation at Krivoi Rog metallurgical plant
Activation of new pipe galvanizing shop at Nikopol' Yuzhnotrubnii plant
Measures taken to eliminate the poor quality of pipes and pig iron castings delivered to the plant imeni M. I. Kalinin
Conference of party workers of the ferrous metallurgical industry held at Zaporozh'e, by Zh. Tkachenko
Khartsyzsk pipe plant begins production of 1,020-mm steel pipe, by I. Mel'nikov
High production of ore at the mine imeni Karl Libknekht
Progress of construction at Severnyi ore beneficiation combine
Production at Zaporozhstal' ingot mold shop hampered by incomplete equipment, by V. Ivanov and others

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 144. 22 Aug 63 9p.
JPRS: 20771.
Order from OTS $0.50 63-31602

Trans. of #Stal' (USSR) 1963 [v. 23] no. 7, p. 577-580, 623.

DESCRIPTORS: *Industrial production, *Metallurgy, Labor, Training, Industrial equipment, Machines, Automation, Steel, Blast furnaces, Sintering.

Contents:
For further increased labor productivity in ferrous metallurgy
New developments at Enakievo metallurgical plant, by A. S. Babii and A. A. Tol'skii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 145. 26 Aug 63, 17p.
4 refs. JPRS: 20801.
Order from OTS $0.50 63-31619

Trans. of Promyshlennaya Energetika (USSR) 1963 [v. 18] no. 6, p. 13-21.

DESCRIPTORS: *Industrial production, *Metallurgy, Lighting equipment, Tests, Industrial plants, Gases, Oxygen, Steel, Manufacturing methods, Dusts, Natural gas, Cooling, Ejection, Boilers, Design.

Contents:
Performance tests of electrical illumination installations in metallurgical combine, by S. A. Sheidin
Leading off converter gases without burning, by S. M. Andon'ev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 146. 27 Aug 63, 28p.
JPRS: 20822.
Order from OTS $0.75 63-31630

Trans of 9 selected articles from 1963 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Steel industry, Iron industry, Pipes, Electric welding, Industrial plants, Construction, Open hearth furnaces, Personnel, Television, Rolling mills, Fuels.

Contents:
The tasks that Soviet metallurgy faces in the near future, by N. Tikhonov
General participation in the planning at the Novomoskovsk metallurgical plant, by A. Shvedchenko
General observation on the metallurgical industry, by V. Lempitskii
Time-saving measures help at Ust'-Kamenogorsk, by A. Stokoz
The good record of the Kuznetsk metallurgical combine, by S. Baev and others
Winners in second quarter competition in ferrous metallurgy in the RSFSR announced
Industrial television is contributing to the steel-making process, by N. Posisaev
Steel and rolled iron production at Begobat, by A. Salenek
Possible improvements in metallurgy by better utilization of fuel, by N. Kalita and N. Shapovalov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 149. 3 Sep 63, 40p.
JPRS: 20902.
Order from OTS $1.25 63-31668

Trans. of Referativnyi Sbornik. [Ekonomika Promyshlennosti] (USSR) 1963, no. 5, p. 98-99 and trans. of 25 selected articles from 1963 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Steel industry, Ores (Metal sources), Brick, Industrial plants, Steel tubing, Pipes, Iron alloys, Castings, Rolling mills, Pellets, Sintering, Excavators, Blast furnaces, Automation, Railroad cars, Construction, Fuel consumption, Heaters, Driers (Apparatus), Machines, Industrial equipment, Economics, Welding, Standardization, Oxygen.

Contents:
Progress in construction of oxygen converter shop at Nizhnii Tagil metallurgical combine
Achievements in the construction of the Kachkanar ore beneficiation combine
Laying of refractory bricks at Avdeevka by-product coke plant.
Progress of construction operations at the oxygen converter shop of the metallurgical combine imeni V. I. Lenin, by M. Dunenkov and I. Morozov
Progress in construction of electric welded steel pipe shop of the Zhdanov metallurgical plant imeni Il'ich
Shortcomings in distribution and supply of pipes
Advertisement by Shuya metallurgical plant offering hardware items for sale
Advertisement by Belgorod iron ore expedition offering several items for sale

Achievements of the collective at the "Lentrublit" plant
Overfulfillment of quotas at the Krasnii Vyborzhets plant, by M. Zhuchkov
The design and manufacture of gigantic machines in Dnepropetrovsk
Measures being undertaken to alleviate shortcomings at industrial construction site in Zhdanov
Achievements at blast furnace shops and slabbing shops at "Zhaporozhstal'" plant
Increase of pipe production at Pervoural'sk pipe plant resulting from operation of "29-102" mill, by V. Biryukov
Measures adopted at Makeeveka metallurgical plant imeni S. M. Kirov for elimination of damages to trains, by V. Danilov
Celebrations and events marking the celebration of Youth Day at Novokuznetsk and Temir-Tau
Measures adopted at the metallurgical plant imeni Lenin for reducing fuel costs and increasing production
Construction of first blast furnace at Zapadno-Sibirskii metallurgical plant
Delivery of first 100-ton converter to Nizhnii Tagil metallurgical combine
New sintering mill at Karaganda metallurgical combine
The efficiency of new equipment and intra-industrial reserves in ferrous metallurgy, by M. S. Novikov
Achievements of workers at the Zestafoni ferrous alloy plant
Beginning of production of large pipes at the Khartsyzsk pipe plant
Progress in the construction and activation of units at the Magnitogorsk metallurgical combine
Need for specialization in the heavy machine building industry, by P. Voronov and others
Advertisement by Alapaevsk metallurgical combine offering to purchase several items.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 154. 4 Oct 63, 28p JPRS: 21319.
Order from OTS $1.00 63-31880

Trans. of #Metallurg (USSR) 1963 [v. 8] no. 7, p. 1-3, 8-9, 14-17, 34-36.

DESCRIPTORS: *Industrial production, *Metallurgy, Steel industry, Iron industry, Blast furnaces, Fuels, Sintering, Industrial plants, High frequency, Electric currents, Electric furnaces, Smelting, Tool steel, Technological intelligence, Automation.

Contents:
Recent advances and problems of Soviet metallurgy, by M. A. Pertsev
Blast furnace operation using mazut as fuel, by Yu. A. Lekontsev and V. S. Nechaev
Large sintering mill at Zhdanov
Achievements of the Uzbek metallurgical plant
High-frequency current used in metallurgy
New electric furnace at Chelyabinsk
New metal products plant at Cherepovets
Improvements of the process of smelting structural and tool steels, by Yu. K. Vorob'ev and V. I. Simonov
Public bureaus of technical information help improve production methods, by N. Olenich
Innovations at the Cherepovets metallurgical plant, by N. Dunaeva.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 155. 8 Oct 63, 21p JPRS: 21367.
Order from OTS $0.75 63-31900

Trans. of Kommunist, Moscow (USSR) 1963 [v. 40] no. 10, p. 86; Byulleten' Tekhniko Ekonomicheskoi Informatsii (USSR) 1963, no. 6, p. 22-23; 6 selected articles from May, Jul-Aug 63 issues of 6 Russian newspapers; 11 brief articles from various Soviet newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Foundries, Television, Costs, Coal, Steel industry, Personnel, Thermochemistry, Furnaces, Pipes, Statistical data, Industrial plants, Machines, Wire, Pipelines, Rolling mills, Pellets, Blast furnaces, Castings.

Contents:
Television in foundry shops
Improper materials pricing
Pechora coal for the steel industry, by V. Katalkin
Day of the metallurgist
Progress in metallurgy
Mismanagement in Magnitorsk
Control and regulation of steel carburizing in thermochemical processing
Difficulties in Magnirogorsk, by V. Beloborodov
Gas pipe delivery problems, by V. Ustyuzhanin
Statistical data on metallurgy
Materials handled by metallurgist plant in Artemovsk
Technical requirement of Krivbass mines
Large converters at Zhdanov
Materials wanted by Chelyabimsk small metal parts plant
Doubling of capacity of the Novomoskovskii metallurgical combine
Help wanted by Baku pipe rolling plant
Deliveries by Trubostal' plant
New concentrate firing equipment
Blast furnace awaits castings
Help wanted in Cherepovets
Orders accepted by Krasnoyarsk pipe stock plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 156. 14 Oct 63, 40p JPRS: 21442.
Order from OTS $1.25 63-31937

Trans. of 23 selected articles from 1963 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Ores (Metal sources), Sintering, Iron industry, Steel industry, Pipes, Metal coatings, Economics, Construction, Mechanical working, Machines, Wire, Mines, Electric furnaces, Foundries, Industrial plants, Iron alloys, Manganese alloys, Open hearth furnaces, Rolling mills, Smelting, Oxygen converters, Blast furnaces, Personnel

Contents:
Production at the Azerbaidzhan ore-concentration combine
A new giant sintering-mill built in Lipetsk
Increased production at the Zaporozhstal' Order of Lenin metallurgical plant undertaken
Gigant-Glubokaya Mine, Ore Administration imeni Dzerzhinskii, Krivbas, to increase output

Another plant built for producing pipe with protective metal coatings
A durable steel without nickel developed
A new city built for miners
A new shop built at the Rustavi metallurgical plant
Complaints about short weight in scrap-metal shipments to Zaporozhstal' and Dneprospetstal', by G. Nakhanovich and A. Troyan
Increased output of cold-rolled steel plate at Zaporozhstal' plant promised, by M. Stoikevich
Completion of Kachkanar coarse crusher announced, by I. Morozov
A new iron wire shop at the Magnitogorsk metallurgical hardware plant, by A. Nikolaev
A new "Gvardeiskaya" mine under construction at Krivoi Rog
A new powerful electric furnace at the Chelyabinsk metallurgical plant
A meeting of pipe-industry workers held in Dnepropetrovsk
A new foundry and metal-structures plant to be built near Tikhvin
A new heat and power plant to be started up at the metallurgical plant imeni Lenin
Increased ferromanganese production at the Kommunarsk metallurgical plant
Production troubles in the open-hearth shop of the Dnepropetrovsk tube-rolling mill imeni Karl Liebknecht, by Pavel Ptichenko and others
Azovstal' metallurgical plant marks 30th anniversary of operation
Oxygen converter shop under construction at Zhdanov plant imeni Il'ich, by I. Kats
Construction begun on rolling shop at western Siberia metallurgical plant
Production problems at the Dneprodzerzhinsk metallurgical plant imeni Dzerzhinsk, by A. Stokoz

Diepschlag, E.
THE CONDITIONS FOR THE FORMATION AND THE POSSIBLE APPLICATION OF IRON CARBONYL: REVIEW. [1963] [5]p. 13 refs.
Order from SLA $1.10 63-16778

Trans. of Stahl und Eisen (Germany) 1924, v. 44, p. 1250.

DESCRIPTORS: *Iron compounds, *Carbonyl radicals, Nickel alloys, Sublimation, Synthesis (Chemistry).

Golikov, I. N. and Muzalevskii, O. G.
PROSPECTS FOR THE CREATION OF COMBINED PROCESSES FOR THE CONTINUOUS CASTING AND ROLLING OF STEEL. [Aug 63] 3 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 9-14.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year; other translations are available from HB $8.90 as HB-5800, Feb 63, 3400 words, and from OTS or SLA $1.10 as 63-13483, JPRS-16733, 17 Dec 62 [10]p.

DESCRIPTORS: *Steel, *Rolling mills, *Casting.

The advantages and disadvantages of continuous casting directly to a rolling mill are described, and the directions in which modifications and improvements are necessary are indicated. A Russian installation is briefly described. (SIC abstract)

Hyspecka, L. [udmila] and others.
THERMOMECHANICAL TREATMENT OF STRUCTURAL STEELS. Sep 63.
Order from MT $28.70 MT Trans-306

Trans. of Hutnicke Listy (Czechoslovakia) 1963, v. 18, no. 1, p. 44-48.

DESCRIPTORS: *Steel, Mechanical working, Deformation, Plasticity.

Itskovich, G. M. [Sautkin, N. I., and Larin, A. V.].
SOLIDIFICATION RATE AND DEPTH OF THE LIQUID PHASE OF A LOW-CARBON RIMMING STEEL, CONTINUOUSLY CAST BILLET. Sep 63.
Order from MT $10.75 MT Trans-324

Trans. of #Metallurg (USSR) 1963, v. 8, no. 5, p. 10-12.
Another trans. is available from BISI £3 as BISI-3323, Jul 63.

DESCRIPTORS: *Steel, Castings, Phase studies, Carbon, Casting.

Klesnil, M.
EFFECT OF CARBONITRIDE LAYER ON THE FATIGUE PROCESS OF CARBON STEEL. Sep 63.
Order from MT $7.90 MT Trans-328

Trans. of Hutnicke Listy (Czechoslovakia) 1963, v. 18, no. 5, p. 349-350.

DESCRIPTORS: *Steel, Carbon, *Fatigue (Mechanics), Cyanogen, Hardness, Brittleness, Surface properties.

Kochnov, V. E. and Gol'dshtein, V. Ya.
KINETICS OF THE RECRYSTALLIZATION OF TRANSFORMER STEEL DURING ANNEALING. [Aug 63] 6 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 61-66.

DESCRIPTORS: Annealing, *Steel, *Recrystallization, Grain structures (Metallurgy), Heat of activation, Nucleation, Transformers

Transformer iron was deformed and annealed at 500 - 700°C for varying times, and the influence of time and temperature studied by grain size measurements and micro-examination. The results are studied theoretically in terms of nucleation and growth, and expressions are derived for rate of growth and activation energy of grain growth. (SIC abstract)

Korobochkin, I. Yu., Protskii, N. E., and Vil'yams, O. S.
INCREASING THE LIFE OF MANDRELS FOR COLD TUBE REDUCING MILLS. 8 Dec 59 [11p] 2refs
TIL Trans. no. 1533; BISI Trans. no. 1499; [DSIR] NLL M. 4881.
Order from OTS or SLA $1.60 62-25328

Trans. of Stal' (USSR) 1959 [v. 19] Rolling and Tube Manufacture Suppl, p. 151-159.

DESCRIPTORS: *Pipes, Production, Machines, *Mandrels, Steel, Mechanical properties.

Investigations demonstrated that mandrels in steel 50KhFA for type-55 and type-80 cold reducing mills are twice as durable and cost less to manufacture than ShKh15 steel mandrels. (Author)

Kozhevnikov, I. Yu.
REDUCTION KINETICS OF IRON ORE-POWDERED COAL NODULES. [Aug 63] 4p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 12-26.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Iron, Ores (Metal sources), *Coal Powders, Reduction (Chemistry), Reaction kinetics.

Pellets of iron ore with powdered coal were heated for varying times in a stream of nitrogen at temperatures between 1250 and 1500 °C, and the amount of reduction determined by chemical analysis. Graphs of the results are given, and an expression is derived for the reaction venocity at different temperatures. (SIC abstract)

Lozinskii, M. G.
A METHOD OF DETERMINING THE VARIATION OF HARDNESS OF ALPHA AND GAMMA IRON HEATED UP TO 1100°C IN VACUO [Metodika Opredeleniya Zakonomernosti Izmeneniya Tverdosti i Faz Stali pri Nagreve do 1100° v Vakuume]. Apr 58 [8p] 4refs
GRC/T. 205; [BISI] Trans. 932; [DSIR] NLL M. 4096
Order from OTS or SLA $1.10 62-13211

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1952, v. 84, no. 1, p. 63-66.
Another trans. is available from HB as HB-3045.

DESCRIPTORS: *Iron, Hardness, Vacuum furnaces, *Steel, Transformations, Heat treatment.

The paper describes in detail a hot hardness tester incorporating a number of novel features, using diamond indentors for operation up to 1,100°C in vacuo. The load is applied by dead weight, so that the instrument is independent of normal hardness testing equipment. Data are presented for the temperature-hardness relationship of the iron-carbon alloys. (Author)

Nasonov, P. Ya., Vasil'ev, E. N. and others.
REDUCTION OF IRON OXIDES WITH HYDROGEN IN A FLUIDISED BED AT ELEVATED PRESSURE. [Aug 63] 6 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 29-36.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year; another trans. is available from HB $8.25 as HB-5785, Jan 63, 2700 words.

DESCRIPTORS: Iron, *Fluidized solids, *Ores (Metal sources), *Iron compounds, Oxides, *Hydrogen, Pressure, Reduction (Chemistry), Scale, Nitrogen.

An apparatus is described for laboratory experiments on the fluidised bed reduction of iron ore or of scale. The results are given for determinations on the effect of pressure, ore feed rate, particle size, and reduction temperature, and the effect of accumulated nitrogen as an impurity in the circulating hydrogen is determined. (SIC abstract)

Oding, I. A. and Gurevich, S. E.
CYCLIC STRENGTH OF HIGH-STRENGTH GRADES OF STEEL. [Aug 63] 8 refs.
Order from SIC $15.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 10-19.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Steel, Fatigue (Mechanics), Heat treatment.

An important paper on fatigue strength of special high-strength steels. The fatigue tests include notch-sensitivity tests with varying types of notch, and different heat-treatments. The influence of micro-heterogeneity was also studied. (SIC abstract)

Popova, N. M.
ANALYSIS OF THE CARBIDE PHASES IN STEEL. May 58 [9p] 11refs GRC/T. 211; [BISI] Trans. 905; [DSIR] NLL M. 4101.
Order from OTS or SLA $1.10 62-24108

Trans. of mono. [Metallovedenie i Termicheskaya Obrabotka Stali i Chuguna; Spravochnik] (The Metallurgy and Heat Treatment of Steel and Cast Iron; a Handbook) ed by N. T. Gudtsov, M. L. Bernshtein, and A. G. Rakhshtadt, Moscow [1956] chap. 11, p. 116-118.

DESCRIPTORS: *Steel, Metallography, Heat treatment, *Iron alloys, *Castings, *Carbides, Separation, Phase studies, Chemical analysis.

Methods are given for the determination of carbide phases in carbon and low-alloy steel, in high speed steel, in austenitic chromium-nickel steels, and in high-chromium ferritic steels. The technique of differential carbide analysis is outlined.

Segawa, K. and others.
CHEMICAL ANALYSIS OF NONMETALLIC INCLUSIONS AFTER EXTRACTION WITH AN ULTRASONIC DRILL. June/July 63, 1500 words.
Order from HB $5.25 HB-5965

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1297-1299.

DESCRIPTORS: *Drills, *Ultrasonic radiation, *Steel, Impurities, Quantitative analysis, Microanalysis, Reagents, Chemical analysis, Separation.

Shapiro, M. M.
THE DETERMINATION OF NON-METALLIC INCLUSIONS IN STEEL. May 58 [6p] 14refs GRC/T. 210 [BISI] Trans. 904; [DSIR] NLL M. 4102.
Order from OTS or SLA $1.10 62-24109

Trans. of mono. [Metallovedenie i Termicheskaya Obrabotka Stali i Chuguna; Spravochnik] (The Metallurgy and Heat Treatment of Steel and Cast Iron; a Handbook) ed by N. T. Gudtsov, M. L. Bernshtein, and A. G. Rakhshtadt, Moscow [1956] chap. 10, p. 112-116.

DESCRIPTORS: *Steel, Metallography, Heat treatment, *Iron alloys, *Castings, *Inclusions (Metallurgy), Chemical analysis.

Methods are given for the chemical or electrolytic extraction of the inclusions and their analysis.

Sokolkov, E. N., Lozinskii, M. G., and Chuprakova, N. P.
SOME PECULIARITIES OF THE MECHANISM OF PLASTIC DEFORMATION OF AUSTENITIC STEEL AND ALLOYS DURING THEIR HIGH TEMPERATURE THERMOMECHANICAL TREATMENT. [Aug 63] 10 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 71-77.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Steel, Austenite, Plasticity, Deformation, Alloys, Heat treatment, Mechanical properties, Microstructure.

High-temperature thermo-mechanical treatment (HTTMT) is described, its effect being to improve the high-temperature mechanical properties. The effect of HTTMT and of conventional heat-treatment on an austenitic steel and a Nimonic type alloy, was investigated, in particular the effect on the structure of the alloys. (SIC abstract)

Vanin, V. S. and Permyakov, V. G.
ACCELERATION OF THE HIGH-TEMPERATURE CARBURIZATION OF STEEL. [Aug 63] 2 refs.
Order from SIC $8.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 92-95.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 5, $68.00/year.

DESCRIPTORS: *Steel, Carbon, Impregnation, Acceleration, High temperature research, Gases, Diffusion, Heat of activation.

Gas carburization tests were carried out at temperatures between 1000° and 1200°C and the influence of temperature and time on composition and thickness of the carburized zone was determined. An equation is given connecting the depth of diffusion layer with carburizing time and temperature. The activation energy is also calculated. (SIC abstract)

Wiesner, F. and Kreuzer, K.
LUBRICANTS AND COOLANTS FOR COLD ROLLING OF STEEL STRIPS. Sep 63.
Order from MT $25.80 MT Trans-331

Trans. of Hutnik (Czechoslovakia) 1963, v. 13, no. 7, p. 328-334.

DESCRIPTORS: *Steel, Cold working, Rolling mills, *Lubricants, *Coolants.

Nonferrous (except light) Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 74. 22 Aug 63, 33p. JPRS: 20764.
Order from OTS $1.00 63-31599

Trans. of Bukhgalterskii Uchet (USSR) 1963 [v. 20, no. 7] p. 44-48; Narodnoe Khozyaistvo Uzbekistana (USSR) 1963 [v. 5] no. 6, p. 64-65; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 5, p. 16-18, 66; and 16 selected articles from 1963 issues of 10 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Costs, Ores (Metal sources), Personnel, Training, Industrial equipment, Industrial plants, Construction, Natural resources, Automation, Management engineering, Machines.

Contents:
Experience in weekly calculation and analysis of product cost price, by B. Tokarev
Restoration of the Akhtal'skii mine, by V. Melkonyan
Qualified cadres needed in non-ferrous metallurgy, by A. Mikhailov
Persistence keeps equipment operational, by V. Overko
Plant construction must be completed, by B. Alelishvili
The Azerbaidzhan metallurgical industry is growing, by K. Rizaev
Automation of combine is lagging, by V. Bakunts
Deficiencies and potentials of the metallurgical industry
The metallurgists are providing non-ferrous metal, by V. Rozhkov
Industrial news and announcements.

Hackspill
INVESTIGATIONS ABOUT ALKALI METALS. [1963] 3p.
Order from SLA $1.10 63-16164

Trans. of Chemisch-Metallurgische Zeitschrift; die Metallbörse (Germany) 1929 [v. 19] no. 1, p. 9.

DESCRIPTORS: *Alkali metals, Chemical reactions, Physical properties, Substitution reactions

Hackspill, L.
SOME PROPERTIES OF THE ALKALI METALS. [1963] 26p. (figs. omitted).
Order from SLA $2.60 63-16169

Partial trans. (p. 1003-1022) of [Helvetica Chimica Acta] Switzerland) 1928, v. 11, p. 1003-1026.

DESCRIPTORS: *Alkali metals, Physical properties, Chemical properties, Alkali metal alloys, Electrolysis, Distribution

Lozinskii, M. G. and Pertsovskii, N. Z.
PECULIARITIES OF NICKEL DEFORMATION AT VARIOUS TEMPERATURES AND RATES OF EXTENSION. [Aug 63] 20 refs.
Order from SIC $15.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnich eskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 90-102.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Nickel, Deformation, Tensile properties, Microanalysis, Microphotography.

Tensile strength measurements were carried out on nickel (99.3% pure) at temperatures from 20 to 1000°C, at deformation rates of 0.5 to 800% per hour. The mechanism of deformation was studied by micro-examination; 24 microphotographs are given. (SIC abstract)

Oding, I. A. and Liberov, Yu. P.
SUSCEPTIBILITY OF FAILURE OF NICKEL UNDER STATIC TENSILE LOADING. [Aug 63] 10 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 125-130.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Nickel, Density, Tensile properties, Stresses, Optical analysis, Electron microscopes, Fracture (Mechanics), *Failure (Mechanics), *Loading (Mechanics), Test methods, Crazing

The behaviour of nickel in tensile testing was studied by (1) observing changes in density during test, (2) analysis of the stress-strain curves, particularly true stress and (3) examination by optical and electron microscope. It is shown that micro-cracks appear long before failure, and a method is suggested for deducing the true stress at which micro-cracks appear. (SIC abstract)

Savitskii, E. M. and Chuprikov, G. E.
EFFECT OF OXYGEN ON THE MECHANICAL AND ELECTRICAL PROPERTIES OF METALLIC RHENIUM. [Aug 63] 4p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 137-142.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Rhenium, Electrical properties, Mechanical properties, Oxygen, Chemical analysis.

The effect of oxygen content on the mechanical properties of Rh was determined, both in the as-cast and in the annealed states. The rhenium was prepared by electron-beam melting or arc melting. Electrical resistivity was also determined. (SIC abstract)

Savitskii, E. M., Baron, V. V., and Efimov, Yu. V.
EFFECT OF CERIUM ON THE PLASTICITY OF VANADIUM. [Aug 63] 13 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 107-113.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Vanadium, *Plasticity, *Cerium, Additives, Test methods.

The effect of cerium additions to vanadiums of different purity was studied by means of microscopic examination, cold-rolling, compression tests, and hardness tests. (SIC abstract)

Schneider, Armin and Esch, Udo.
ON THE REACTIONS BETWEEN MAGNESIUM AND SULFUR DIOXIDE (Über die Reaktionen Zwischen Magnesium und Schwefeldioxyd). [1963] [21]p. (foreign text included) 13 refs.
Order from SLA $2.60 63-18134

Trans. of Zeitschrift für Metallkunde (Germany) 1940, v. 32, no. 6, p. 173-177.

DESCRIPTORS: *Magnesium, *Sulfur compounds, *Dioxides, Casting, Chemical reactions.

Smirnov, M. P. and Rudnichenko, V. E.
X-RAY STUDY OF THE PHASE COMPOSITION OF LEAD-CALCIUM ALLOYS. [1962] 16p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5129

Trans. of [Gosudarstvennyi Nauchno-Issledovatel'skii Institut Tsvetnykh Metallov. Sbornik Nauchnykh Trudov] (USSR) 1956, v. 12, p. 150-162.

DESCRIPTORS: *Lead alloys, *Calcium alloys, *Phase studies, *Bismuth, Intermetallic compounds, Quantitative analysis.

It was established by means of X-ray phase analysis that calcium in a lead-calcium, plant alloy is present in the form of the intermetallic compound $CaPb_3$ which also participates in the removal of bismuth from lead. Studies of three synthetic alloys of the lead-calcium system containing 4.6, 20.8 and 25.6 wt. % calcium show that $CaPb_3$ is the most stable of three compounds in this system. The possibility of carrying out an express, X-ray determination of the $CaPb_3$ content in plant alloy samples is pointed out. (Author)

Tonkonogii, A. V.
CYCLONE METHOD OF SMELTING COPPER CONCENTRATES [Tsiklonnyi Metod Plaski Mednykh Kontsentratov]. [1963] 18p. (figs. tables omitted) 4 refs.
Order from OTS or SLA $1.60 63-16223

Trans. of [Akademiya Nauk Kazakhskoi SSR, Alma Ata]. Vestnik, 1956 [v. 12] no. 6 [p. 79-88].
Another trans. is available from OTS or SLA $2.60 as 59-14289 [1959] [21]p.

DESCRIPTORS: *Cyclone furnaces, Aerodynamics, *Smelting, *Copper, Fuel consumption, Waste gases, Sulfuric acid.

For abstract see Technical Translations 8: 1043, 1962.

Structural Metallurgy and Corrosion

STUDIES OF STEEL CORROSION IN HIGH TEMPERATURE WATER AND STEAM. Quarterly rept. no. 2, 1 Oct-31 Dec 62, on Contract 089-62-7 RDB. [1963] [141]p. 18 refs.
Order from OTS or SLA $11.00 EURAEC-552

Trans. of a rept. from Société d'Études, de Recherches et d'Applications pour l'Industrie, Brussels (Belgium) 30 Jan 63.

DESCRIPTORS: Steam, Water, *Stainless steel, High temperature research, *Corrosion, Sampling, Sterilizers, Surfaces, Coding, Metal plates, Hydrogen, Diffusion.

The autoclave tests dealt with stainless steel type AISI 304 in the four surface states retained for the present study, in water at 300°C and steam at 400°C and 200 kg/cm2. Residences of two and six weeks were observed in the first case and of two weeks in the second case. Among the connected work, the realization of an initial chemical condition of samples of a reproducible nature and the perfecting of a method of evaluating the rate of corrosion, are mainly to be noted. The use of a boiler plate steel necessitated certain adjustments and examinations, especially in as far as the taking of 1 mm thick samples, on the "skin" side, with a complete elimination of the cold-hardened zones is concerned. The operational conditions of the autoclave tests were defined at a few points in order to render the realization of these tests even more strict. (Author)

Arzhanyi, P. M., Volkova, R. M., and Prokoshkin, D. A.
THERMAL DIFFUSION IN TUNGSTEN-BERYLLIUM SYSTEM. [Aug 63] 15 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 162-166.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Beryllium alloys, *Tungsten alloys, *Thermal diffusion, Phase studies, Equations, High temperature research, *Crystal lattices.

The diffusion of Be into W at 900-1200°C was studied by microscopical and X-ray examination. Three phases of different compositions were identified, and equations for the effect of temperature on the diffusion coefficient of each are given, and their crystal lattices determined. (SIC abstract)

Barton, K. and others.
A NEW METHOD OF IMPROVING THE RESISTANCE OF STEEL TO ATMOSPHERIC CORROSION. Sep 63.
Order from MT $31.00 MT Trans-315

Trans. of Strojirenstvi (Czechoslovakia) 1963, v. 13, no. 1, p. 46-51.

DESCRIPTORS: *Steel, *Corrosion, Atmosphere, *Metal coatings, Structures, *Zinc coatings, *Corrosion inhibition, Protective treatments.

Braun, N. P. and Matyushenko, N. I.
EFFECT OF NIOBIUM AND ZIRCONIUM ON THE STRUCTURE OF CAST AUSTENITIC STEEL. [Aug 63] 5p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 81-89.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Steel, *Castings, *Austenite, Additives, Zirconium, Niobium, Microstructure, Nickel, Chromium, Tungsten.

Ingots were cast from an austenitic Ni-Cr-W steel containing additions of either Zr or Nb, up to about 1% in each case. The microstructure was determined from sections at the top, middle and bottom of the ingot in the as-cast condition and, in some cases, after homogenisation. The micrographs obtained are reproduced. (SIC abstract)

Gulyaev, V. N.
"HEALING" OF VACANCIES DURING CREEP AS A FACTOR IN INCREASING HIGH-TEMPERATURE STRENGTH. [Aug 63] 10 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 103-106.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/years; another trans. is available from OTS $1.25 in 63-21627, JPRS-18817, 22 Apr 63, 41p.

DESCRIPTORS: *Steel, Nickel alloys, Manganese alloys, Chromium alloys, *Creep, Metals, Nitrogen, Niobium, *Crystal lattices, Structural properties, *Heat resistant metals and alloys.

The theory of healing of vacancies is discussed, and the conditions for healing by small foreign atoms during creep are postulated, and are shown to be in good agreement with results of other investigators for pure metals. Creep tests were carried out on Cr-Mn-Ni steels containing 0.20-0.36% N_2 and 0-1.26% Nb, and the beneficial effect of the N_2 in the absence of Nb confirmed the theory. (SIC abstract)

Horiguchi, S. and Ohno, A.
CORROSION RESISTANCE OF ALUMINIZED STEEL IN THE ATMOSPHERE. [1963] [11]p.
Order from SLA $1.60 63-18496

Trans. of [Kinzoku Hyomen Gijutsu] (Japan) 1960, v. 11, no. 2, p. 41-44.

DESCRIPTORS: Atmosphere, *Steel, *Aluminum alloys, Metal coatings, Electroplating, *Corrosion inhibition, Surfaces, *Aluminum coatings.

In order to study the corrosion resistance of aluminized steel in the atmosphere, aluminum, aluminized steel, Al-Cu, Al-Zn, Al-Mg, Al-Si alloy coatings on the steel, galvanized steel, and various electroplated specimens were tested in various locations with different atmospheric conditions for a period of two years. It was definitely proved that the corrosion resistance of aluminized steel was as good as pure aluminum. It was also found that pin holes that used to be problems in the past were of no consequence with aluminized steel in the atmosphere. After-treatment such as anodizing aids aluminized steel to have longer service life and still keep a good shiny surface. This factor alone is a good reason why aluminized steel could invade the field where galvanized steel has had the exclusive market. (Author)

Ko, Chih-ming, Kornilov, I. I., and Pylaeva, E. N.
INVESTIGATION OF STRUCTURE AND PROPERTIES OF TITANIUM-ALUMINIUM-MOLYBDENUM ALLOYS. [Aug 63] 3p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 114-118.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Molybdenum alloys, *Aluminum alloys, *Titanium alloys, Microstructure, Hardnes, Creep.

The structure of Ti-rich Ti-Al-Mo alloys was determined by hardness tests at the elevated temperatures concerned, and a ternary diagram is given for 600 °C. The alloys tested contained up to 20% Al and 10% Mo, and tests were carried out up to 1000 °C. Creep data are inferred from the hardness tests at elevated temperatures. (SIC abstract)

Kornilov, I. I. and Yakimova, A. M.
CREEP AND STRUCTURE OF TITANIUM-CHROMIUM AND TITANIUM-MOLYBDENUM ALLOYS CONTAINING HYDROGEN. [Aug 63] 4p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 4, p. 119-125.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 4, $68.00/year.

DESCRIPTORS: *Titanium alloys, *Chromium alloys, *Molybdenum alloys, *Hydrogen, Creep, Microstructure.

The effect of hydrogen was determined on the creep strength of Ti-Cr and Ti-Mo alloys containing up to 14.3% Cr and 30.4% Mo respectively; the creep tests were carried out at 500 - 550 °C. Microphotographs showing the effect of hydrogen on the structure are given. (SIC abstract)

Lukashevich-Duvanova, Yu. T. and Urazova, V. A.
NITRIDE INCLUSIONS IN LOW-CARBON HIGH-CHROMIUM STEEL. [Aug 63] 4p
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962 [no. 6, p. 73-80].
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year.

DESCRIPTORS: *Steel, *Chromium, Carbon, *Nitrides, Inclusions (Metallurgy), Heat treatment, *Nitrogen, Chemical analysis.

Chemical and X-ray structural analyses were made of the quantity, nature and behaviour of the nitride inclusions during heat treatment of low-carbon high-chromium steel (13-17% Cr) which contained varying concentrations of manganese, molybdenum, niobium, titanium, zirconium, vanadium, boron and aluminium. In addition, methods have been developed for separate determination of nitrogen in high-chromium steel, of nitrogen dissolved in the metal and of nitrogen present as nitrides. (SIC abstract)

Nowotny, Hans.
THE CRYSTALLINE STRUCTURE OF Cu_2Te. [1963] 5p. (figs. refs. omitted).
Order from SLA $1.10 63-18483

Trans. of [Zeitschrift für Metallkunde] (West Germany) 1946, v. [37] [no. 1/2] p. 40-42.

DESCRIPTORS: *Copper alloys, *Tellurium alloys, Crystal structure, Crystal lattices, Phase studies, Microstructure

Polotskii, I. G. and Levin, G. I.
EFFECT OF ULTRASOUND ON CRYSTALLIZATION OF SUPERCOOLED MELTS. [1963] [7]p. 11 refs.
Order from OTS or SLA $1.10 63-18454

Trans. of Akademiya Nauk URSR [Kiev]. Instytut Metallofizyky. Sbornik Nauchnykh Rabot, 1961, v. 13 [p. 177-180].

DESCRIPTORS: Phenyl radicals, Salicylates, *Crystallization, *Ultrasonic radiation, Motion picture photography, Liquid metals, Melting, Liquids, Cooling, Crystal structure, Crystals

Method for taking moving picture of crystallization of melts in ultrasound field was constructed. Moving picture of the crystallization process of supercooled salol non-irradiated by sound, and subjected to action of ultrasound, was taken. It was established that at the action of ultrasound, intense crystallization of salol takes place first near the source of ultrasound oscillations and, at later stage, the formation of crystallization regions in melt occurs. It is shown that due to resonant air bubbles a strong dispersion of salol crystals takes place at the boundary line crystal-melt and that they are one of the most important elements for acceleration of crystallization process and reduction of the kernel size in ultrasound field. (Author)

Prokoshkin, D. A., Matveeva, M. P., and Platov, Yu. M.
EXAMINATION OF DISLOCATIONS IN CAST AND DEFORMED POLYCRYSTALLINE CHROMIUM. [Aug 63] 2p.
Order from SIC $8.00

Abridged trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 107-111.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 6, $68.00/year; a complete trans. is available from OTS $1.25 in 63-21627, JPRS-18817, 22 Apr 63, 41p.

DESCRIPTORS: *Chromium, Deformation, *Crystal lattice defects, Dislocations, Castings, *Etched crystals.

The presence of existing dislocations and fresh dislocations can be studied by etching, which shows the dislocations as etching pits. The numbers so revealed for polycrystalline Cr are in agreement with those found by other methods. (SIC abstract)

Rogel'berg, L. N., Kuznetsov, G. M., and Sobolenko, T. M.
X-RAY INVESTIGATION OF SOLID SOLUTION BREAKDOWN IN ALUMINIUM ALLOYS AFTER QUENCHING AND DEFORMATION. [Aug 63] 7 refs.
Order from SIC $12.00

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1962, no. 3, p. 81-84.
Also available from SIC in Russian Metallurgy and Fuels, 1962, no. 3, $68.00/year.

DESCRIPTORS: *Aluminum alloys, Deformation, Quenching (Cooling), Magnesium alloys, Zinc alloys, Solids, Solutions, X-rays, Crystal lattices.

A study was made of the breakdown of solid solutions in Al-Mg alloys (7.3% Mg) which had been quenched and deformed, and annealed at various temperatures, using X-rays to determine lattice constants and line width. The influence of zinc addition (0.94%) was also examined. (SIC abstract)

Rudy, E. and Stecher, P.
TO BUILDING-UP OF A SYSTEM HAFNIUM-OXYGEN. [1963] 15p. (figs. omitted) 13 refs.
Order from SLA $1.60 63-18461

Trans. of Journal of the Less-Common Metals (Netherlands) 1963, v. 5 [no. 1] p. 78-89.
Another trans. is available from SLA $1.60 as 63-18308 [1963] [12]p.

DESCRIPTORS: Hafnium compounds, *Oxides, Metallography, *Hafnium alloys, Mechanical properties, Hardness, Electrical properties, Powder alloys.

Shamrai, F. I.
THE TERNARY SYSTEM: Al-Mg-Li. II. PHASE DIAGRAMS OF AUXILIARY CROSS SECTIONS (Troinaya Sistema: Alumunii-Mahnii-Litii). 23 July 63 [19]p. RSIC-32.
Order from OTS or SLA $1.60 63-23553

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1948, no. 1, p. 83-94.

DESCRIPTORS: *Aluminum alloys, *Magnesium alloys, *Lithium alloys, *Phase studies, Calorimetry, Microstructure, Hardness, Electrical conductance.

Vlasakova, L., Volrabova, B., and Volenik, K.
INITIAL OXIDATION OF STRUCTURAL STEELS AT ELEVATED TEMPERATURES. Sep 63.
Order from MT $21.50 MT Trans-230

Trans. of Strojitenstvi (Czechoslovakia) 1961, v. 11, no. 11, p. 843-847.

DESCRIPTORS: *Steel, Oxidation, Corrosion resistant alloys, Corrosion inhibition, High temperature research.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 292. (PHYSICS AND MATHEMATICS SERIES). 12 Sep 63, 12p.
JPRS: 21044.
Order from OTS $0.50 63-31743

Consists of abstracts of articles from the scientific and technical journals of East Germany and Poland.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *East Germany, *Poland, Nuclear energy, Nucleonics, *Research reactors, Reactor reactivity, Reactor control, Reactor moderators, Reactor fuel elements, Reactor lattice parameters, Reactor safety systems, Reactor coolants, Neutron cross sections, Oscillators, Iron, Reduction (Chemistry), Gamma rays, Quantitative analysis, Cadmium, Diffusion, X rays, Dose rate, Dosimeters, Gases, Radioactivity, Chlorides, Ions, Pulse analyzers, Scintillation counters.

PROCEEDINGS OF THE WORKING CONFERENCE ON SLOW NEUTRON PHYSICS, 7-12 DEC 61. May 63, 292p
Order from OTS $3.50 AEC-tr-5734

Trans. of mono. Materialy Rabochego Soveshchaniya po Fizike Medlennykh Neitronov, 7-12 Dek 61 G., Dubna, 1962, 240p

DESCRIPTORS: *Thermal neutrons, *Nuclear radiation spectrometers, *Neutron cross sections, Nuclear reactors, *Electron accelerators, Isotopes, Nuclear reactions, Nuclear cross sections, Nuclear magnetic resonance, Neutron capture gamma rays, Nuclear resonance, Nuclear energy levels, Neutron capture, Neutron reactions, Neutron diffraction analysis, Gamma rays, Nuclear spectroscopy, Recording systems, Neutron scattering, *Single crystals, Neutron beams, Nuclear properties, Crystal structure, Neutron transport theory, *Conferences.

Contents:

Application of an optical model to averaged cross sections for low-energy neutrons, by P. E. Nemirovskii
Energy dependence of the cross sections of the reaction (n, γ) on the nuclei of nine elements, by Yu. P. Popov and F. L. Shapiro
Investigations in the field of neutron spectrometry on the VVR-M atomic reactor of the Institute of Physics, Academy of Sciences Ukranian SSR, by V. P. Vertebnyi and others
Neutron-spectroscopic investigations on the linear electron accelerator of the atomic energy institute, Academy of Sciences USSR, by Yu. V. Adamchuk and others
Total neutron cross sections of even-even isotopes of molybdenum, by Yu. V. Adamchuk and others
Determination of the power function according to measurements of the transparency for E_n from 40 to 400 Kev, by E. A. Koltypin and G. B. Yan'kov
Measurement of the shape elastic cross section by the self-screening method, by A. Andreeff
Properties of neutron resonances nuclear fission, by M. I. Pevzner
Investigation of the triple fission of U^{235} and Pu^{239} for thermal neutrons, by M. Dakowski and others
Characteristics of the IBR as a neutron spectrometer, by G. I. Zabiyakin and others
Investigation of the total neutron cross sections of elements with the LNF pulsed reactor, by Wang Nai-yen and others
Investigation of neutron resonances using a capture gamma-ray detector, by Kim Hi-sang and others
Measurement of the total effective cross sections of tantalum using a mechanical neutron selector, by R. Ya. Doil'nitsyn and others
Statistics of the nuclear levels (the Daison theory) by Ya. A. Smlorodinskii
Properties of nuclear resonance levels excited by slow neutrons, by S. I. Sukhoruchkin
Angular correlations of resonance capture γ rays, by K. G. Ignat'ev and others
An attempt to detect interference in the (n, γ) cross-section of hafnium, by K. G. Ignat'ev and others
Cascade γ radiation in the reaction (n, γ) on slow neutrons, by I. V. Estulin and others
On interference in the radiation capture cross-section of neutrons by gold in the resonance 4.9 ev, by B. Kardon and others
The energy levels of Gd^{156} and Gd^{158}, by L. V. Grushev and others
Internal formation of pairs during the capture of neutrons in Cl^{35}, by L. Meyer
Neutron capture gamma rays from mercury, by H. L. Gersch
On the total reflection of neutrons on metallic mirrors, by D. Bally and others
Use of cobalt mirrors for the polarization of thermal neutrons, by Yu. A. Murav'ev and others
Asymmetry of the beta decay of the nuclei Li^8, Ag^{108}, and Ag^{110}, formed as a result of the capture of polarized thermal neutrons, by Yu. G. Abov and others
Direct detection of anomalously decreased absorption of thermal neutrons during diffraction on a nonmosiac crystal, by D. Zippel
Increasing the effectiveness of analyzers of circular polarization of γ rays, by Yu. A. Prokof'ev and V. P. Martem'yanov
On one possibility of investigating the time invariance of nuclear forces, by P. A. Krupchitskii
Measurement of the effective absorption cross-section of Au for thermal neutrons, by Ch. Toic and others
Thermal neutron activation cross sections of short-lived isomeric states, by K. F. Alexander and H. F. Brinckmann
System of time lags using magnetostrictive lines for neutron spectroscopy according to transit time, by A. E. Golovin and others
"Time stretching" scheme for a neutron selector according to transit time, by Yu An-Sun
Multichannel systems of registration of the Neutron Physics Laboratory, United Nuclear Research Institute, by G. I. Zabiyakin
Inelastic effects in the scattering of neutrons in liquids and solids, by E. A. Janik
Inelastic effects in the scattering of neutrons in liquids and solids, by A. Wanic
The study of correlation in liquids by neutron spectrometry, by K. Mikke
Angular distribution of the scattering of neutrons on ethylene and propylene, by D. Bally and others
On the reconstruction of the law of dispersion of phonons according to the non-coherent scattering of slow neutrons, by Yu. M. Kagan and O. G. Chicherin

Inelastic scattering of slow neutrons on arbitrary crystals and the general problem of reconstruction of the phonon spectrum, by Yu. M. Kagan

The scattering of slow neutrons on the nuclei of impurities in a crystal, by Yu. M. Kagan

An investigation of the magnons in a crystal of Franklinite by the method of neutron scattering, by K. A. Walia and others

A setup for investigating the dynamics of matter in the condensed state by means of inelastic scattering of cold neutrons, by M. G. Zemlyanov and N. A. Chernoplekov

A study of the inelastic scattering of cold neutrons on biphenyl, by M. G. Zemlyanov and N. A. Chernoplekov

An investigation of the phonon spectrum of vanadium according to the inelastic scattering of cold neutrons, by N. A. Chernoplekov and others

Investigations of the scattering of cold neutrons by small angles in ordered alloys close to the Kurnakov point, by N. Kroo and L. Pal

Lattice dynamics of the ammonium halides by inverted beryllium filter method, by K. Mikke

Investigation of the dispersion law of phonons in a monocrystal, by J. Sosnowski and J. Kozubowski

The interaction of neutrons with molecules in the region of high energies, by Yu. S. Sayasov and G. K. Ivanov

Theory of resonance scattering on atomic systems, by M. V. Kazarnovskii and A. V. Stepanov

Calculations of the differential scattering cross-sections of slow neutrons in the approximation of an isotropic bond of the atom, by V. F. Turchin and others

Scattering of neutrons with energies of about 5 ev in graphite and LiF, by T. A. Machekhina and others

A setup for measurements with cold neutrons, by V. V. Golikov and others

A neutron crystal spectrometer, by S. Krasnicki

Transient time spectrometer for slow neutrons, by T. Niewiadomski and others

Multirotor mechanical neutron choppers, by E. Ya. Doil'nitsyn and others

Characteristics of the Atomic Physics Institute neutron chopper with curved slits, by Ch. Toic and others

A mechanical filter for experiments with thermal neutron beams, by K. F. Alexander and R. Kastner

Investigations to determine the conditions of the best shield as applied to neutron diffraction experiments on the VVR-S reactor, by K. Kleinschtuck and D. Zippel

A survey of neutron diffraction investigations conducted in the Nuclear Research Institute in 1960 and 1961, by K. Blinowski and others

Investigation of the scattering of neutrons by solids, conducted in the Laboratory of Neutron Physics, Atomic Physics Institute, Academy of the Rumanian Peoples Republic, by D. Bally

Magnetic transformations in chromium, by N. A. Alikhanov

Neutron diffraction investigation of $Mn_xFe_{3-x}O_4$, by Yu. Z. Nozik

Neutron diffraction investigation of alloys Ni-Cr, by V. I. Goman'kov and others

Neutronographic investigations on Fe-Co-V alloys, by K. Kleinstuck

About the influence of total reflections and intensity distribution over the cross-section of the primary beam on neutron reflexes, by W. Hase and K. Kleinstuck

Neutron diffraction study of the crystal structure of uranyl nitrate hexahydrate, by E. S. Makarov and A. A. Melik'yan

Diffraction determination of the position of hydrogen atoms in the structure of $Li_2SO_4.H_2O$, by L. E. Fykin and others

An investigation of the diffusion of neutrons in water and ice close to 0°C and ice at -80°C, by A. V. Antonov and others

A study of the diffusion of neutrons in water and ice as a function of the temperature by the pulsed neutron source method, by Z. Dlouhy and I. Kvitek.

Baratov, G. F.
MEASURES FOR PROTECTION FROM IONIZING RADIATIONS WHEN WORKING WITH RADIOACTIVE ISOTOPES [AND] TABLE OF CONTENTS. 20 Aug 63, 63p. JPRS: 20729.
Order from OTS $1.75 63-31580

Trans. of mono. Zashchita Naseleniya v Usloviyakh Primeneniya Atomnogo, Khimicheskogo, i Bakteriologicheskogo Oruzhiya (Protection of the Polulation Under Conditions of the Use of Atomic, Chemical, and Bacteriological Weapons) Kiev, 1962, chap. 8, p. 378-424.

DESCRIPTORS: *Radioactive isotopes, *Protective clothing, *Dosimeters, *Decontamination, Health physics, *Civil defense systems.

The basic requirements in the "Sanitary Regulations of Work with Radioactive Substances and Sources of Radioactive Radiations" approved in 1960 are cited. Appendices are included dealing with the following topics: basic concepts, definitions, and terms; rules of behavior in response to civil defense signals; model staff of the self-defense group of a dwelling house or agricultural enterprises; model tables of equipment of a self-defense group, the unitary team, and emergency-rescue CD teams; and norms of expenditure of listed degassing substances and their solutions upon degassing of a locality.

Galkin, N. P., ed.
CHEMISTRY AND TECHNOLOGY OF FLUOROUS COMPOUNDS OF URANIUM: EXCERPTS. [1963] 13p
Order from OTS or SLA $1.60 63-14738

Partial trans. (excerpts) from mono. [Khimiya i Tekhnologiya Ftoristykh Soedinenii Urana, Moscow, 1961] p. 43, 140-142, 167-168, 171, 173.

DESCRIPTORS: *Uranium compounds, *Fluorides, Fluorination, *Reactor fuels, Synthesis (Chemistry), Purification, Calcination, Chemical reactions.

Ivanov, V. I., Keirim-Markus, I. B., and Kovalev, E. E.
DOSES OF COSMIC RADIATION (Dozy Kosmicheskoi Radiatsii). [1963] [40p] (foreign text included) 29refs
Order from OTS or SLA $3.60 63-18701

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1962, v. 12, p. 35-46.

DESCRIPTORS: *Cosmic rays, *Dose rate, *Radiological dosage, *Solar radiation, *Solar flares, Shielding, *Space medicine, Radiation effects, Mathematical analysis

Topics include the biological effects of radiation from primary cosmic radiation, solar flares, the outer radiation belt of the Earth, and the inner radiation belt of Earth.

Nuclear Engineering and Power

NUCLEAR SCIENCE DEVELOPMENTS IN YUGOSLAVIA. 3 Oct 63, 10p JPRS: 21316.
Order from OTS $0.50 63-31879

Trans. of Tehnika (Yugoslavia) 1963 [v. 18] no. 8, p. 1431-1432; and from Borba (Yugoslavia) 1963, 28 Aug, p. 5

DESCRIPTORS: *Nuclear physics, Conferences, *Yugoslavia, *Cyclotrons, Laboratory equipment, *Radioactive isotopes, *Nuclear reactors.

Contents:
Seminar on the possibilities of using the cyclotron in Zagreb, by P. S.
Catalog of equipment and services in nuclear science and technology, by B. J.
Radioactive isotopes, by S. M. (review of mono. Radioaktivni Izotopi, Vinca, 1963, 69p)
School reactor at Belgrade University
International agency funds for nuclear research in Yugoslavia

Krupchitskii, P. A.
USE OF HEAVY-WATER REACTOR FOR EXPERIMENTAL WORK ON NUCLEAR AND REACTOR PHYSICS. 7 Oct 63, 35p 46refs JPRS: 21349.
Order from OTS $1.00 63-31895

Trans. of mono. Ispol'zovanie Tyazhelovodnogo Reaktora Instituta Teoreticheskoi i Eksperimental'noi Fiziki Akademii Nauk SSSR dlya Provedeniya Eksperimentov po Yadernoi Fizike i Fizike Reaktorov (Obzor) (Use of the Heavy-Water Reactor of the Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR for Conducting Experiments on Nuclear Physics and Reactor Physics (Survey)) Moscow, 1961, p. 1-27.

DESCRIPTORS: *Heavy water reactors, *Test reactors, Neutrinos, Radioactive decay, Neutron cross sections, Neutron beams, Polarization, Gamma-ray spectra, Neutron capture, Thermal neutrons, Reactor fuel elements.

The paper reports on research which is being carried out in the field of nuclear and reactor physics with the heavy water reactor belonging to the Institute of Theoretical and Experimental Physics of the Academy of Sciences of the USSR and deals with the organization and planning of experiments. Particular attention is paid to the following experimental set-ups: Measurement of the electron-neutrino correlation in free neutron decay; measurement of resonance neutron cross sections using a neutron selector with a mechanical chopper; production of beams of polarized thermal neutrons and measurement of the spins of compound nuclei and of the magnetic moments of short-lived nuclei; investigation of the gamma ray spectra emitted during neutron capture by nuclei; critical experiments with the heavy water reactor; thermal neutron density distribution in fuel elements; and space invariants of nuclear forces. (Author)

Lazarev, P. P., Kitaigorodskii, A. I. and others.
ENERGY, ITS SOURCES ON EARTH AND ITS ORIGIN, PT. IV. 31 May 63 [107]p. 16 refs. FTD-TT-61-479.
Order from OTS or SLA $9.10 63-23620

Unedited rough draft trans. of mono. Energiya, Ee Istochniki na Zemle i Ee Proiskhozhdenie, Moscow, 1959, chaps. 16-19, p. 195-276.

DESCRIPTORS: *Energy, Sources, Earth, *Energy management, *Nuclear physics, *Radioactivity, *Nuclear engineering, Nuclear reactions, Fission, Thermonuclear reactions, Nuclear energy, Nuclear reactors, *Nuclear industrial applications, *Mass-energy relation.

Contents:
Relation between law of conservation of mass and law of conservation of energy
Radioactivity
Physical principles of nuclear power engineering
Utilization of nuclear energy

PHYSICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 275 (PHYSICS AND MATHEMATICS SERIES). 22 Aug 63, 9p. JPRS: 20775.
Order from OTS $0.50 63-31604

Consists of abstracts of articles from the scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *East Germany, *Hungary, Electron tubes, Counting methods, Electron multipliers, Spectrum analyzers, Stabilization systems, Nuclear energy, Absorption spectra, Magnetic susceptibility, Pneumatic devices, Groups (Mathematics), Geodesics, Distribution theory, Programming (Computers), Functions.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 313 (PHYSICS AND MATHEMATICS SERIES). 7 Oct 63, 27p JPRS: 21344.
Order from OTS $0.75 63-31891

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *Czechoslovakia, *Poland, *Nuclear energy.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 319 (PHYSICS AND MATHEMATICS SERIES). 11 Oct 63, 26p JPRS: 21420.
Order from OTS $0.75 63-31925

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia, East Germany, and Poland.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *Czechoslovakia, *East Germany, *Poland, *Applied mathematics, *Nuclear energy, *Nucleonics.

USSR SCIENTIFIC ABSTRACTS: PHYSICS AND MATHEMATICS NO. 4. 9 Oct 63, 27p JPRS: 21381.
Order from OTS $0.75 63-31905

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, Plasma physics, Molecules, Atoms, Nuclear physics, Solid state physics, Mechanics, Mathematical analysis, Differential equations, Integral equations, Statistical processes, Computers, Control systems.

Contents:
I. Physics
Experimental plasma physics
Theoretical plasma physics
Atomic and molecular physics
Nuclear physics
Solid state physics
Mechanics
II. Mathematics
Analysis
Differential and integral equations
Statistics
Computers and control.

Ali, L.
THE NATURE OF THE DOPPLER FREQUENCY SHIFT IN LIGHT DIFFRACTED BY ULTRASOUND IN LIQUIDS. [1963] [35]p. 11 refs.
Order from SLA $3.60 63-18928

Trans. of Helvetica Physica Acta (Switzerland) 1936, v. 9, p. 63-83.

DESCRIPTORS: *Doppler effect, *Light, *Diffraction, *Ultrasonic radiation, Liquids, Mercury lamps, Tests, Measurement, *Frequency shift.

Kienel, G. and Lorenz, A.
A GETTER ION PUMP FOR TECHNICAL PURPOSES. [1962] [16]p. 3 refs.
Order from SLA $1.60 62-16307

Trans. of Vakuum Technik (West Germany) 1960, v. 9, no. 1 [p. 1-6].

DESCRIPTORS: *Ions, *Pumps, Design, Structural parts, *Vacuum apparatus, Gases, Absorption, Ionization, Seals (Stoppers), Measurement.

Described are a getter ion pump made of metal, flange seals made of aluminum and gold, as well as an ultra-high vacuum valve with aluminum gasket. Some measuring results are given attained by means of these structural parts. The pumping speed of the getter ion pump for the hydrogen, oxygen and nitrogen is 740 l/sec. The getter metal supply (titanium) within the pump is sufficient to absorb approsimately 200 Ncm^3 (std. cc) of these gases. The ultimate pressure to be obtained with this pump type is lower than $2x10^{-10}$ mm Hg. (Author)

Kraussold, H.
HEAT TRANSFER IN CYLINDRICAL LAYERS OF FLUIDS INVOLVING NATURAL CONVECTION. [1963] 16p. 16 refs.
Order from SLA $1.60 63-18154

Trans. of Forschung auf dem Gebiete des Ingenieurswesen (Germany) 1934, v. 5, p. 186-191.

DESCRIPTORS: *Heat transfer, *Thermal conductivity, *Liquids, Convection, Water, Oils, Test equipment, Tests, Thermodynamics.

Electricity and Magnetism

Gaume, François.
COILS WITHOUT IRON FOR THE PRODUCTION OF VERY INTENSE CONTINUOUS MAGNETIC FIELDS. CALCULATION AND REALIZATION, tr. by Henry H. Kolm. 17 Sep 59 [117]p. 66 refs. LL Group rept. M81-12.
Order from OTS or SLA $9.60 62-33140

Trans. from Centre National de la Recherche Scientifique, [Paris]. Journal des Recherches (France) 1958, no. 43.

DESCRIPTORS: *Coils, Iron, Production, *Magnetic fields, *Numerical analysis, Design, Magnets *Electromagnetic fields, Conductors, Electric currents.

Contents:
Abstract
Introduction
Calculation of the characteristics of windings: Choice of external shape and distribution of current density
Cooling of the windings, electromagnetic forces, similarity relations
Electromagnetic forces acting on the conductors
Effect of the intensity of the supply current and similarity relations.

Hilsch, R., Korn, D. and Minnigerode, G. V.
ON THE MAGNETIC DETECTION OF THE SUPERCONDUCTIVITY OF EVAPORATED METAL FILMS. [1963] [12p] 6refs
Order from SLA $1.60 63-20353

Trans. of Zeitschrift für Physik (West Germany) 1962, v. 167, p. 501-510.

DESCRIPTORS: *Thin films, *Metal films, Vapor plating, *Lead, *Tin, Foils, *Superconductivity, *Ferromagnetism, Transition temperature, Measurement, Test equipment, Magnet coils, Cryostats.

There is described an apparatus for the detection of superconductivity and ferromagnetism of a single evaporated film in the temperature range from 1.8° to 300°K. The observation of the magnetic moment of the film in a homogenous alternating magnetic field is made possible by means of a special device of two coils. Tests with Pb and Sn foils result in the known transition temperatures of bulk material. A Sn film in highly disordered state is produced by quenching condensation. The magnetic transition of such a film is found to be 0.8°K higher than the transition temperannealed film. The magnetic measurement proves the increased transition temperature for the whole material of the film. (Author)

Kornetzki, M.
REMANENCE OF IDEAL MAGNETIZATION (Die Remanenz der Idealen Magnetisierung). [1963] 14p. 15 refs.
Order from SLA $1.60 63-18885

Trans. of Zeitschrift f[ür] Angew[andte] Physik (West Germany) 1962, v. 14, no. 3, p. 53-56.

DESCRIPTORS: Magnetism, *Magnetic fields, *Inductance, Ferromagnetic materials, Magnetic properties.

It is deduced from the Preisach diagram that at low field strength, the difference between ideal magnetization and its remanence is equal, according to the occupancy function present, either to the magnetization on the new curve or to the reversible magnetization. That is, the relative remanence of ideal magnetization should be greater, the greater the ratio of initial slope of the ideal magnetization curve to initial permeability (of the new curve). The relationships deduced are checked against previously published results of measurements (by Gould and McCaig) on preferentially oriented permanent magnets of Alcomax III, and confirmed to a certain extent. In the preferential direction, the relative ideal remanence is practically 100%; perpendicular to the preferential direction, about 80%. A gain of apparent internal shear factor observed by Gould and McCaig in a nickel wire under mechanical tension can also be interpreted in the light of the above considerations. Some relationships given by Wolfarth for decoupled single-domain particles between various states of remanence can be read off directly from the Preisach diagram. (Author)

Lenard, Philipp.
ON THE ELECTRICITY OF WATERFALLS. [1963] 57p 17refs
Order from SLA $5.60 63-18864

Trans. of [Annalen der Physik] (Germany) 1892, v. 46 [p. 584-636].

DESCRIPTORS: *Atmospheric electricity, Water, Hydrodynamics, Air.

Preisach, F.
ON MAGNETIC AFTEREFFECT. [1963] 26p. (figs. formulae omitted) 27refs
Order from SLA $2.60 63-20120

Trans. of Zeitschrift für Physik (Germany) [1935] v. 94, p. 277-302.

DESCRIPTORS: *Magnetism, *Magnetic properties, Ferromagnetic materials, *Dielectric properties, Hysteresis, Alternating current

Sabban, Klaus.
NON-LINEAR CONTROLLABLE INDUCTANCES MADE OF THIN MAGNETIC FILMS. [1963] 27p. 3 refs.
Order from SLA $2.60 63-18739

Trans. of Zeit[schrift für] Angew[andte] Physik (West Germany) 1961, v. 13, no. 9, p. 420-425.

DESCRIPTORS: *Films, *Ferromagnetic materials, *Inductance, Coils, Oscillators, Magnetism, Magnetic properties, Electrical conductance,

The dependence of the inductance of a coil with a magnetizable film on the premagnetization of the film is calculated. An equivalent circuit is set up for the coil, consisting of a dissipative parallel oscillating circuit and an inductance connected in series. The values (resonance frequency, quality, capacity, conductivity and inductance) of the parallel oscillating circuit are functions of the premagnetization. They are represented by "contour lines" in the "premagnetization plane" and are checked experimentally. It is further found that quality and resonance frequency, and conductivity and capacity, are proportional to one another and that the absolute width of band is constant and not dependent on the premagnetization of the film. (Author)

Sequenz, H.
CONTRIBUTIONS TO THE EQUATION FOR THE HYSTERESIS LOOP. [1963] 11p. (figs. tables formulae omitted) 14refs
Order from SLA $1.60 63-20271

Trans. of Archiv f[ür] Elektrotechnik (Germany) 1935, v. 29, no. 6, p. 387-394.

DESCRIPTORS: *Hysteresis, *Magnetic properties, Equations, *Mathematical models, Magnetic fields, Mathematical analysis, Permeability (Magnetic), Fourier analysis, Series

Soska, F.
INFLUENCE OF THE NONHOMOGENEITY OF THE ELECTRIC FIELD ON THE VALUES OF THE EQUIVALENT ELECTRICAL CIRCUIT OF THE OSCILLATIONS IN PIEZOELECTRIC RODS. [1963].
Order from SIC $12.00

Trans. of mono. Konference o Monokrystalech (Conference on Single Crystals) (no. 3) Prague, 1960. [Proceedings] p. 292-296.

DESCRIPTORS: *Piezoelectric crystals, Mathematical analysis, Electric fields, Crystal oscillators, Circuits, Oscillation, Electrodes, Piezoelectric effect

In formulas for calculating values of equivalent oscillation circuits in piezoelectric cuts, homogeneity of the field between the electrodes is usually assumed. The correction in inhomogeneity due to the finite length of the electrode is considered. Formulas for calculating the equivalent electrical circuit for longitudinal torsional and bending oscillations are derived. (SIC abstract)

Electronics

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIOPHYSICS SERIES, 1963, VOL. 6, NO. 1. 4 Oct 63, 430p JPRS: 21326. Order from OTS $6.00 63-31883

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1963, v. 6, no. 1, p. 5-200.

DESCRIPTORS. *Electronics, Radiofrequency spectroscopy, Electromagnetic waves, Transformations, Mechanical waves, Nuclear magnetic resonance, Equations of motion, Gas discharges, Electromagnetic properties, Waveguides, Electron beams, Space charges, Magnetrons, Traveling-wave tubes, Nonlinear systems, Oscillation, Control theory, Radio astronomy, Resonators, Microwave spectroscopy.

Molecular and atomic frequency standards, by A. N. Oraevskii
Transformation of acoustic and electromagnetic waves at the boundary of an elastic conductor in a magnetic field, by V. M. Kontorovich, and N. A. Tishchenko
Apparatus for observation of broad nuclear magnetic resonance lines, by V. S. Grechishkin and M. L. Zlatogorskii
Statistical stability of motion, by A. N. Malakhov
Fluctuations in a degenerate electron gas, by A. G. Sitenko and I. V. Simenog
Non-periodic solutions of field equations at boundaries of the pass band of a sinusoidally modulated unshielded impedance structure, by V. I. Talanov
An investigation of the properties of surface-wave fields above an anisotropic impedance plane, by V. G. Myshkin
Effect of electric oscillations on the regeneration of magnetic oscillations of a gyrotropic specimen, by A. V. Vashkovskii
Dispersion equation for waveguides with curvilinear electron beams, by V. K. Yulpatov
Use of the kinetic equation method in the investigation of the interactions between electromagnetic waves and the curvilinear electron beams, by M. I. Petelin
Geometric optics approximation for space-charge waves, by N. S. Stepanov
Anode block of magnetron type with resonators of elliptical transverse sections, by A. I. Tereshchenko, and A. G. Shein
Investigation of traveling-wave amplifiers with semiconductor diodes, by S. V. Gvozdover and A. S. Gorshkov
Interaction between nonlinear oscillating systems in the presence of linear coupling forces with small delay, by B. A. Altshul and V. P. Rubanik
Investigation of one nonlinear system on a torus, by Z. S. Batalova and L. N. Belyustina
Concerning one nonlinear problem connected with vibration ramming theory, by Z. S. Batalova
Contribution to the theory of automatic control systems with modulation, by S. V. Shil'man
Radio emission from "seas" and "continent of the moon in the millimeter band, by A. G. Kislyakov and B. Ya. Losovski
Use of narrow-band low-frequency filter in radio spectroscopy, by O. G. El'sting
Concerning one type of resonator for magnetor radio spectroscopy at microwave frequencies, by E. M. Ganapol'skii and A. N. Chernets
Letter to the editor
Information.

Becker, A.
ON THE PASSAGE OF SLOW CATHODE RAYS THROUGH METALS, II. [1963] [13p] 4refs
Order from SLA $1.60 63-20354

Trans. of Annalen der Physik (Germany) 1929, ser. 5, v. 2, no. 3, p. 249-263.

DESCRIPTORS: *Thin films, *Metal films, *Nickel, Permeability, *Electron beams, Velocity.

Iordanskii, S. V.
A SOLUTION OF CAUCHY PROBLEM FOR THE KINETIC EQUATION OF AN ELECTRONIC PLASMA. [1963] 8p. 2 refs.
Order from OTS or SLA $1.10 63-18755

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 127, no. 3, p. 509-512.

DESCRIPTORS: *Plasma physics, *Electrons, Dynamics, Equations, Special functions, *Nonlinear differential equations, *Partial differential equations.

Jäntsch, O.
APPARENT IMPEDANCE AND BLOCKING CHARACTERISTICS OF SILICON P-N JUNCTIONS HAVING SURFACE INVERSION LAYER. [1963] [24]p. 28 refs.
Order from SLA $2.60 63-18756

Trans. of Solid-State Electronics (U. S.) 1962, v. 5, p. 249-259.

DESCRIPTORS: *Rectifiers, *Silicon, Surface area, Electrical properties, Space charges, Static electricity, Electrical impedance, *Solid state physics, Semiconductors.

The equivalent circuit diagram of a p-n junction with surface inversion layer is a chain of finite lengths with infinitesimal RC-links. From measurements of the apparent impedance, determination was made of the thickness of the space-charge region and the channel conductivity, and from these, the total surface charge and the surface potential. In a rectifier of the $p\text{-}s_p\text{-}n$ type, the inversion layer covers the entire surface of the soft p-conductive silicon. If such a rectifier has an impurity defect below the surface, the breakdown voltage will increase with the surface charge, i.e., as the channel becomes more pronounced. (Author)

Pupp, W.
THE EFFECT OF THE ANODE UPON THE STABILITY OF THE HOMOGENEOUS COLUMN PLASMA IN ARGON. [1963] 14p. 5 refs.
Order from SLA $1.60 63-18147

Trans. of Physik[alische] Zeitschrift (Germany) 1933, v. 34, p. 756-761.

DESCRIPTORS: *Gas discharges, *Argon, *Mercury, Vapors, *Discharge tubes, *Plasma oscillations, Gas ionization, Ion sources, *Anodes.

Molecular Physics and Spectroscopy

Brossel, Jean, Margerie, Jean, and Kastler, Alfred.
INCREASE IN THE RATE OF ATOMIC DIRECTION OF SODIUM VAPOR IN THE PRESENCE OF HYDROGEN (Augmentation du Taux d'Orientatioatomique de la Vapeur de Sodium en Présence d'Hydrogène). [1963] 3p. 3 refs.
Order from SLA $1.10 63-18094

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1955, v. 241, p. 865-867 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Sodium, Vapors, Atomic properties, Impurities, *Hydrogen, Vapor pressure, Optical phenomena, *Resonance absorption

A study was made of the observed fact that, during optical pumping, sodium exhibits a greater atomic orientation in the presence of an impurity gas (in this case hydrogen) than it does in a pure state. It was found that when the intensity of the magnetic resonance is led to a constant signal of optical resonance, the intensity grows very quickly for the pressures $O<p<O.2$ mm, attains a maximum at $0.3<p<0.5$ mm, and slowly decreases thereafter. At pO. 2 an undetermined phenomena intervenes to neutralize the gain achieved by the process.

Cohen-Tannoudji, Claude, Brossel, Jean, and Kastler, Alfred.
PHASE CONSERVATION BEYOND THE COLLISION OF AN ATOM OF DIRECTED SODIUM AND AN HELIUM ATOM (La Conservation de la Phase Hors de la Collision d'un Atome de Sodium Orienté et d'un Atome d'Hélium). [1963] 4p. 9 refs.
Order from SLA $1.10 63-18095

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1957, v. 244, no. 8, p. 1027-1029 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Atomic spectroscopy, *Nuclear magnetic resonance, *Phase studies, *Sodium, *Helium, Atoms, Zeeman effect.

Dahlgren, Sven-Eric.
THE PRECISION IN ABSORPTION SPECTROPHOTOMETRIC ANALYSIS. [1963] 15p. (figs. formulae omitted) 7 refs
Order from SLA $1.60 63-16214

Trans. of reprint of Teknisk Tidskrift (Sweden) 1960 [v. 90] 14 Oct [p. 983-988].

DESCRIPTORS: *Laboratory equipment, *Spectrophotometers, Operation, Absorption spectrum, Errors, Calibration, Temperature, Refractive index, Electric potential, Stability.

Duchesne, Jules.
RELATIONS BETWEEN MOLECULAR STRUCTURE, THE VIBRATIONS, AND CHEMICAL REACTIVITY. [1963] [27p] 24refs
Order from SLA $2.60 63-20057

Trans. of Acad[émie] Roy[ale des Sciences, des Lettres et des Beaux-Arts de] Belg[ique]. Classe [des] Sci[ences]. Bull[etins] 1952 [ser. 5] v. 38, p. 197-218.

DESCRIPTORS: *Molecular structure, *Heat of activation, Molecular properties, Valence, Addition reactions Vibration, Substitution reactions, Chemical bonds, Paramagnetism, Electrons, *Dipole moments.

One of the essential problems posed by a modern study of chemical reactivity concerns the formation mechanisms of charges and free valences. The fundamental character common to the theories proposed up to the present as an interpretation of these mechanisms resides in the use of static molecular models. With the introduction of the idea that the density distribution of the charge depends upon molecular vibrations and their symmetry, the author has developed a reactivity theory based on a dynamic model. In this manner he has discovered new sources of charges and free valences which play a considerable role in the interpretation and calculation of the energy of activation of the reactions. The new theory permits us to consider not only the π-electrons, to which the earlier theories are limited, but also the σ-electrons, the importance of which is established. Among its most general results, the proposed representation formulated affords the possibility of directing the evolution of chemical reactions by infrared photoactivation. (Author)

Eckhardt, Wilfried.
SPECTRAL INVESTIGATIONS IN THE WAVELENGTH REGION AROUND 1 mm. VI. DESIGN OF A PULSED MASS RADIATOR AND ITS CHARACTERISTICS AS A SPECTROSCOPIC RADIATION SOURCE. [1962] 26p. 16 refs.
Order from SLA $2.60 63-10274

Trans. of Zeitschrift für Physik (West Germany) 1960, v. 160, p. 121-143.

DESCRIPTORS: *Infrared spectroscopy, Spectrum analyzers, Design.

Frankevich, E. L. and Tal'roze, V. L.
A MASS SPECTROMETER FOR INVESTIGATING THE PROCESSES WHICH OCCUR WHEN ELECTRONS AND IONS COLLIDE WITH MOLECULES (Mass Spektrometr dlya Issledovaniya Protsessov Proiskhodyashchikh pri Stolkoveniyakh Elektronov i Ionov s Molekulami) tr. by Zanis Stuberovskis. Mar 63 [17]p. 10 refs. E-T-R-63-7.
Order from OTS or SLA $1.60 63-23145

Trans. of Pribory i Tekhnika Eksperimenta (USSR) 1957, no. 2, p. 48-53.

DESCRIPTORS: *Mass spectrometers, Design, *Electron beams, *Ion beams, Electron guns, Electron multipliers, Circuits, Ionization chambers, Electrons, Scattering, Ions, Molecules.

A mass spectrometer designed for investigation by the electron and ion impact method is described. Ionizing electrons are "quasimonochromatized" by introducing a retarding electrode into the electron gun whose potential is modulated by an alternating voltage with a low amplitude and a 10 Hertz frequency. The ion current is amplified by a resonance amplifier on this same frequency. An electron multiplier is used for primary amplification of the ion current. Measures are taken to collect an ion beam with a large solid angle. The retarding potential method is used to measure the primary kinetic energy of ions. (Author)

Guenebaut, Henri and Pascat, Bernard.
GENERAL CHEMISTRY: REGARDING THE BEHAVIOR OF PH_3 PURE OR DILUTED IN ARGON IN A SHOCK WAVE. [1963] 4p. (figs. omitted) 9 refs.
Order from SLA $1.10 63-18395

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1962, v. 255, p. 1741-1743 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Phosphorus compounds, Hydrides, Decomposition, *Luminescence, Reflection, Emissivity, *Band spectrum, *Shock waves, *Argon.

Pure PH_3 decomposes in a shock wave with considerable formation of red phosphorous with luminous emission visible only in the reflection; diluted in argon it gives, after the incident wave, highly luminous shocks of which the spectra are characterized by intense and extended emissions of PH in particular and P_2, the presence of bands of OH increases considerably the relative intensity I_{P_2}/IPH. (Author)

Kratky, O. and Porod, G.
X-RAY ANALYSIS OF DISSOLVED CHAIN MOLECULES. [1963] [26]p. 15 refs.
Order from SLA $2.60 63-18921

Trans. of Recueil [des Travaux Chimiques des Pays-Bas] (Netherlands) 1949, v. 68, p. 1106-1122.

DESCRIPTORS: *Polymers, *Vinyl radicals, *Bromides, *Nitrocellulose, Solutions, Naphthalenes, Acetones, *X-ray diffraction analysis.

Miyanishi, Michiyoshi.
MECHANISM OF GAS COMBUSTION. [1963] 11p. (figs. omitted) 3 refs.
Order from SLA $1.60 63-16810

Trans. of an article from an unidentified Japanese source, n.d.

DESCRIPTORS: *Gases, *Combustion, *Absorption spectrum, *Spectrum analyzers, Octanes, Heptanes, Formaldehyde, Hydrocarbons, Molecular properties, Antiknock, Lead compounds, Ethyl radicals, Ethylenes, Bromides.

Munster, A.
CONCERNING THE THEORY OF CRITICAL FLUCTUATIONS. [1963] 19p. 24 refs.
Order from SLA $1.60 63-18931

Trans. of J[ournal de] Chim[ie] Physique (France) 1960, v. 57, p. 492-499.

DESCRIPTORS: *Liquids, Molecular properties, Light, *Diffusion, *Line spectrum, Oscillations, *Quantum statistics, *Field theory, Differential equations, *Correlation techniques, *Carbon tetrachloride, *Cyclohexanes, Methyl radicals, Fluorides.

The theory of critical fluctuations is developed from principles of statistical mechanics. A semifine correlation function is introduced and it is shown that it amounts to the same thing as suppressing the very short wavelengths of the spectrum of fluctuations. Near the critical point, the spectrum is expressed by a reference spectrum always remaining a blank spectrum. Ornstein and Zernike's equations are encountered. A solution of the differential equation verifying conditions at the limits is obtained. The phenomenological theory recently developed by Debye is discussed. Finally, it is shown that the diffusion of visible light immediately furnishes the semifine correlation function. (Author)

Olkowsky, J. and Cohen, L.
α SPECTROMETRY ISOTOPIC ANALYSIS OF URANIUM, tr. by H. Basil. Jan 63 [8]p. 8 refs.
Order from OTS or SLA $1.10 AEC-tr-5606

Trans. of Commissariat à l'Énergie Atomique Paris (France) no. 1821, 1961.

DESCRIPTORS: *Uranium, Radioactive isotopes, Spectrographic analysis, *Alpha particle spectroscopy, *Mass spectrometry, *Optical analysis.

The optical method competes effectively with that of α spectrometry in regions of low enrichment in U^{235}. But each method possesses its own advantages. Thus, the optical method is more rapid, but α spectrometry requires less initial matter (≤100 μg) and it is not destructive. By improving the resolution of α spectrometers through interposition of mechanical canalizers, it is possible to measure isotopic mixtures which content in U^{235} is as low as 0.1 %, just as in the case of the optical method, and with a relative precision of the same order of magnitude. On the other hand α spectrometry cannot compete with mass spectrometry as the latter method is much more precise and has a much greater range of measurements. Nevertheless, α spectrometry may render important services in extreme cases (U^{235} enrichment close to 0 or 100%, as well as in all experiments where U234 plays a part which is not negligible either from the point of view of mass or the emission of α (Author)

Schönheit, E.
MASS SPECTROMETRIC DETECTION OF IONS WITH THE ION TRANSFER DETECTOR. [1963] 3p
Order from SLA $1.10 63-18942

Trans. of Zeitschrift f[ur] Naturforschung (West Germany) 1960, v. 15a [no. 9] p. 839-841.

DESCRIPTORS: *Mass spectroscopy, Ions, *Ionic current, Amplifiers, Measuring devices (Electrical and electronic), Fluorescent screens.

Ul'bert, K. and Butyagin, P. Yu.
ELECTRON PARAMAGNETIC RESONANCE SPECTRA ARISING AFTER MECHANICAL AND THERMAL PROCESSING OF NATURAL CYSTINE-CONTAINING POLYMERS. 2 Oct 63, 6p 11refs JPRS: 21285.
Order from OTS $0.50 63-31864

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 5, p. 1194-1196.

DESCRIPTORS: *Cystine, *Free radicals, *Cysteine, *Paramagnetic resonance, Heat treatment, Keratin, Polymers, Organic materials, Material separation, Chemical bonds, Line spectrum.

Mechanical and thermal processing of natural keratin high molecular substances affected the appearance of free radicals as shown by electron paramagnetic resonance spectra. Spectrographs of hoofs, hair, fur, and mixtures of cystine with gelatin and with carboxymethylcellulose after processing are given. It is theorized that mechanical destruction of cystine compounds results in the formation of free radicals and the transfer of free valence. This study was aimed toward confirming the hypothesis of the stabilizing role of cystine in cases of mechanical destruction of natural cystine-containing polymers.

Weigert, F.
SPECTRAL PHOTOMETRY. [1963] 68p (figs. omitted)
Order from SLA $6.60 63-18774

Trans. of mono. Optical Methods of Chemistry, Leipzig, 1927, chap. 7, p. 175-247.

DESCRIPTORS: *Spectrophotometers, *Spectroscopy, *Absorption spectrum, *Photometers, *Optical instruments, Optical properties, Brightness, Colors, Wedges, Ultraviolet radiation, Organic solvents, Solids, Optical analysis.

Optics

Bonch-Bruevich, A. M. and Molchanov, V. A.
A NEW RELATIVISTIC OPTICAL EXPERIMENT. [1963] 22p 30refs
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R23. When supply is exhausted, order from OTS or SLA $2.60 63-20239

Trans. of Optika i Spektroskopiya (USSR) 1955, v. 1, no. 2, p. 113-124.

DESCRIPTORS: *Light, Motion, *Velocity, Solar radiation, *Relativity theory, *Optics.

The article deals with the direct experimental verification of the relativistic thesis concerning the independence of the velocity of light and the velocity of the source of radiation relative to the observer. The experimental setup is described and the results are given of a comparison of the times of travel over a fixed path of light emitted from the right and left equatorial limbs of the sun. The results of measurements correspond to the second postulate of the theory of relativity. (Author)

Stepanov, B. I.
ON A VIOLATION OF THE LAW OF BOUGUER IN MEDIA WITH A NEGATIVE COEFFICIENT OF ABSORPTION, tr. by L. J. Holtschlag. 13 Aug 63, 5p 1ref APL/JHU TG 230-T379
Contract NOw 62-0604-c
Order from OTS $0.50 63-11685

Trans. of Akad[emiya] Navuk BSSR [Minsk]. Doklady, 1961, v. 5, no. 11, p. 489-491.

DESCRIPTORS: *Optical phenomena, Light, Absorption, Emissivity, *Quantum statistics, *Lasers.

Hora, Heinrich.
ARRANGEMENT FOR MEASURING THE SPECTRUM WITHOUT OPTICAL METHODS. [1963] [20]p. 6 refs.
Order from SLA $1.60 63-18723

Trans. of Optik (West Germany) 1962, v. 19, no. 7, p. 357-368.

DESCRIPTORS: *Spectrum analyzers, Light, *Photoelectric cells (Semiconductor).

Physical principles of a method are described for measuring the spectral distribution of light intensities by purely electronic methods, without applying any well-known optical and spectroscopic equipment, such as gratings, filters or prisms. The method requires only a suitable photoelectric cell. The function of intensity I is coordinated definitely with frequency of a current-voltage function of the photoelectric cell. Under simple (linear) conditions, the coordination can be expressed by an integral equation of the first kind. An integral equation is used for a more general case. The resolving power and the accuracy of absolute measurements of light intensity are estimated in terms of the accuracy necessary for measuring the current-voltage function. The advantage of the new method over previous methods lies in the relative simplicity and compactness of the apparatus and in the fact that an electronic technique of this type can more easily be made automatic. (Author)

Basov, N. G. and Bogdankevich, O. V.
RECOMBINATIONAL LUMINESCENCE OF GaAs AND Ge BY EXCITATION WITH HIGH-SPEED ELECTRONS. [1963] [4p] 2refs
Order from OTS or SLA $1.10 63-18330

Trans. of #[Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki] (USSR) 1963, v. 44, no. 3, p. 1115-1116.

DESCRIPTORS: Semiconductors, *Electron beams, *Excitation, Germanium, Arsenic, Gallium, *Luminescence, Recombination reactions, Beta particles, *Electron bombardment.

In the present work recombination radiation from n-type Ge and GaAs by irradiation of the samples with a beam of electrons having energies of approximately 0.6 Mev was obtained. The electron beam was obtained from a linear electron accelerator. The intensity of the radiation from the sample sharply increased upon cooling from room temperature to the temperature of liquid nitrogen. In duration the radiation from Ge drops exponentially with a time constant of approximately 200 microsec. The duration of the radiation from GaAs corresponded to the length of the electron pulses. The spectra of the radiation of the GaAs sample was measured by the pulse amplitude from the FEU-28 photomultiplier on the oscilloscope screen. The measurements of the spectra from such a sample are presented.

Benacerraf, Andre and Guittard, Micheline.
ON Me_2Se_3 SELENIDES OF LANTHANITES (OF GADOLINIUM LANTHANUM) TYPE Th_3P_4 WITH A LARGE AREA OF HOMOGENEITY.
Order from SLA $1.10 63-18158

Trans. of Acad[emie des] Sci[ence] Paris. Comptes Rendus (France) 1959, v. 248, p. 2012-2014 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Selenides, *Gadolinium compounds, *Lanthanum compounds, *Crystal structure, *Samarium compounds, Dissociation, *Rare earth compounds, *Neodymium compounds.

Preparations of Me_2Se_3 selenides and their properties are presented. All of these selenides crystallize in the type Th_3P_4 cubic system and exist inside a large area of homogeneity. Dissociation of these compounds in a vacuum and at different temperatures is studied. The lower limit of the series could be determined only for selenide of samarium: $SmSe_{1.27}$. (Author)

Borisov, M., Kynev, S., and Georgieva, I.
ON A NEW RECTIFIER EFFECT WITH CdS SINGLE-CRYSTALS. [1963] [6]p. 6 refs.
Order from SLA $1.10 63-18473

Trans. of Bulgarska Akad[emiya na Naukite]. Dokl[ady] 1962, v. 15, no. 7, p. 715-718.

DESCRIPTORS: *Semiconductors, *Single crystals, *Cadmium compounds, *Sulfides, *Rectifiers, Coatings, Silver compounds, Copper compounds, Oxides, Electrical properties, Photoconductivity.

A new way of obtaining relatively good rectification from cadmium sulphide single crystals is reported in which the anode plays a decisive role with respect to the forward current. It is presumed, on the basis of the experimental measurements, that in this case not only the injection of electrons from the cathode, but also that of holes from the anode, plays an essential role. (Author)

Dachselt, W. D. and Pfefferkorn, G.
STRUCTURE OF COPPER OXIDE WHISKERS AND DETERMINATION OF THEIR GROWTH IN LENGTH. [1963] [14p] (figs refs omitted)
Order from SLA $1.60 63-18817

Trans. of Zeitschrift für Naturforschung (West Germany) 1960, v. 15[a] p. 412-417.

DESCRIPTORS: *Copper compounds, Oxides, *Whiskers (Crystallography), Crystal structure, Determination, *Single crystals, Corrosion, *Metallic crystals, Crystal growth

By using silver and HCl copper oxide whiskers were grown between 200° and 300°C. that were measurable with the light microscope. They form CuO single crystals along [110] at the boundaries of the whiskers, six-sided prisms frequently appeared. The growth in length proceeded lineraly ($L = v[110] \cdot t$) till inhibition. The temperature dependency of the rate of growth in length is approximately determined by the empirically ascertained function, $-v[110] = Ae^{-BK}$. At constant temperature individual whiskers show distinguishable rates of growth in length. Crystal growth and formation of neclei are assumed to be rate-determining processes. Possibilities are discussed for a sufficiently rapid surface diffusion of the "building blocks" to the growth point at the whisker tip. Mixings can influence the whisker formation significantly and give an explanation for the observed temperature boundaries of the whisker growth. (Author)

Davydov, B. E., Raskina, E. M., and Krentsel', B. A.
SOME PROPERTIES OF POLYMERIC SEMICONDUCTORS. [1963] [3p] 1ref
Order from OTS or SLA $1.10 63-18179

Trans. of Vysokomolekulyarnye Soedineiya (USSR) 1962, v. 4, no. 10, p. 1604-1605.

DESCRIPTORS: *Semiconductors, *Polymers, Acrylonitrile polymers, Electrical conductance, Thermoelectricity

Based on a study of the temperature dependence of the thermal electromotive force of semiconductor polymers it was shown that they may be classified as semiconductors, semimetals and metals. It has been found that at elevated temperatures a number of polymers change the sign of the thermal emf and hence the sign of the current carriers (determined by the sign of the emf). (Author)

Frantsevich, I. N., Kalinovich, D. F., Kovenskii, I. I., Smolin, M. D.
DETERMINATION OF EXTENT OF IONIZATION FOR COMPONENTS OF AN Mo-W ALLOY. 10 Oct 63, 3p 4refs JPRS: 21406.
Order from OTS $0.50 63-31915

Trans. of #Fizika Tverdogo Tela (USSR) [1963] v. 5, no. 6, p. 1728-1730.

DESCRIPTORS: *Tungsten alloys, *Molybdenum alloys, Radioactive isotopes, Electron transitions, Ionization.

The study examines electron transfer of components in an alloy of molybdenum with 15 atomic-percent tungsten. A thin layer of the radioactive isotope Mo^{99} or W^{185} was electrolytically applied on the central portion of wire samples 0.5 mm in diameter and about 70 mm in length, made from the indicated alloy. As the basic parameter in the electron transfer, the so-called effective charge of the ions was determined, allowing both for their direct interaction with the electrical field, as well as for the effects of removal of ions by current carriers (the phenomenon of electron-vacancy wind). At all temperatures molybdenum ions migrated toward the anode, tungsten ions -- toward the cathode. The absolute values of effective charges evidence that the process of tungsten ion electron transfer is governed by the prevailing influence of the vacancy wind, and that of the molybdenum ions -- by the electronic wind. A transition of a certain fraction of the electrons released into the collectivized fund by molybdenum atoms to tungsten atoms, was found. Evidently, these electrons enter into partial occupancy of the impurity 5d- bands of the latter. Thus, donor-acceptor interaction of components is present in the alloys studied. (Extracted)

Guillet, Leon.
THE METHODS OF PREPARATION OF METALLIC SINGLE CRYSTALS. [1963] [8p] 22refs
Order from SLA $1.10 63-18218

Trans. of Chimie et Industrie (France) 1940, v. 43, p. 283-286.

DESCRIPTORS: *Metallic crystals, *Single crystals, *Crystal growth, Vapors, Liquids, Solids, Recrystallization, Electrolysis, Manufacturing methods.

Guittard, Micheline, Flahaut, Jean, and Domange, Louis.
SELENIDES OF YTTRIUM, GADOLINIUM, DYSPROSIUM AND ERBIUM. [1963] 4p. 2 refs.
Order from SLA $1.10 63-18163

Trans. of [Academie des Sciences] Paris. Comptes Rendus (France) 1963, v. 256, no. 2, p. 427-429 (pub. by Gauthier Villars et Cie., Paris).

DESCRIPTORS: *Selenides, *Yttrium compounds, *Gadolinium compounds, *Erbium compounds, *Dysprosium compounds, *Crystal structure.

The structures of the selenides of gadolinium and dysprosium have the Th_3P_4 type which is the type of structure of the L_2Se_3 selenides of the first elements of the rare earth but in a range of compositions with less selenium than L_2Se_3. The stoichiometrical selenides of these two elements have a new structure, of Sb_2S_3 type. Erbium and yttrium are clearly distinct of the other elements of the series and form determined compounds Er_2Se_3 and Y_2Se_3 of a particular structural type, super structure of a slightly distorted cubic centered face network. Dysprosium makes a transition between these two groups, by yielding under special conditions, a compound Dy_2Se_3 with the latter structural type, whereas usually it has a Sb_2S_3 type. (Author)

Harten, H.-U.
INVERSIONLAYERS ON SILICON AT THE SILICON ELECTROLYTE INTERFACE (Inversionsschichten in Silicium an der Grenze zu Einem Elektrolyten). [1963] [3]p. (foreign text included) 3 refs.
Order from SLA $1.10 63-18816

Trans. of Zeitschr[ift für] Naturforschung (West Germany) 1961, v. 16a, p. 1401.

DESCRIPTORS: *Electrolytes, *Silicon, Surface properties, Electrical conductance, Electric potential, *Semiconductors, *Space charges.

Khamskii, E. V. and Nazarova, E. G.
PENETRATION OF IRON IONS INTO AMMONIUM NITRATE CRYSTALS. [1963] 5p. 5 refs.
Order from OTS or SLA $1.10 63-18403

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1962, v. 35 [no. 6] p. 1206-1209.

DESCRIPTORS: *Iron, Ions, *Crystals, *Nitrates, *Ammonium compounds, Penetration, Impurities, Hydroxyl radicals, Crystallization.

Investigating the effects of crystallization rate, of $Fe(NO_3)_3$ content in liquid phase and of stirring intensity on the penetration of iron ions into crystals of ammonium nitrate, it was established that the degree of penetration raises with increasing crystallization rate and iron nitrate content in solution, while it diminishes with increasing stirring. It was found that the iron penetration into the crystals of ammonium nitrate during crystallization does not exceed 0.1% under conditions of a relative sursaturation from 0.04 to 0.08 and of an iron nitrate content of the solution up to 15%. (Author)

Logunov, L. A. and Pitanov, V. S.
THE VOLTAMPERE CHARACTERISTICS OF GaAs TUNNEL DIODES. [1963] [4p] 1ref
Order from OTS or SLA $1.10 63-18718

Trans. of #Radiotekhnika i Elektronika (USSR) 1963, v. 8, no. 4, p. 723-[724].

DESCRIPTORS: *Gallium compounds, *Arsenides, *Tunnel diodes, Zinc, *Electrical properties, *Semiconductor devices, *Transistors, Diodes (Semiconductors)

The reverse and forward sides voltampere characteristics of p-n junctions obtained from p-type GaAs alloid with Zn (to a concentration (4-10) x 10^{19} cm^{-3}) were studied. The dependence of the logarithm of the conductivity on the voltage across the p-n junction is presented and the characteristics of the diode for forward biasing are constructed on a semilogarithmic scale.

Moers, K.
CONDUCTIVITY MEASUREMENTS ON HIGH-MELTING CARBIDES, NITRIDES, AND BORIDES AT ROOM TEMPERATURE AND AT LOW AND HIGH TEMPERATURES. [1963] 23p. 18 refs.
Order from SLA $2.60 63-18878

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1931, v. 198, p. 262-275.

DESCRIPTORS: *Carbides, *Nitrides, *Borides, *Electrical conductance, Sintering, Refractory materials.

Myuller, R. L.
THE VALENCE NATURE OF THE ELECTRICAL CONDUCTIVITY OF SEMICONDUCTING GLASSES. [1963] 26p. 37 refs.
Order fromOTS or SLA $2.60 63-18919

Trans. of Leningrad U. Vestnik (USSR) 1961, v. 16, no. 22, Ser[iya] Fiz[ika] i Khim[ii] no. 4, p. 86-96.

DESCRIPTORS: *Glass, *Semiconductors, *Electrical conductance, *Valence, Selenium, Crystal structure, Crystal lattices, Chemical bonds, Polymers.

A model of the mechanism of the intrinsic conductivity of semiconductors with low current carrier mobility is proposed on the basis of a representation of the individual nature of localized electron-pair bonds between atoms. The theoretical expression for the pre-exponential quantity σ_0, derived with such a model, gives values which are in agreement with the experimental values for crystalline and amorphous inorganic polymeric substances with low current carrier mobilities. The homology of the mechanisms of ionic conduction for dielectrics and the electron conduction for semiconductors of the specified type is determined. (Author)

Natta, G[iulio] Corradini, P[aolo] and Allegra, G[iuseppe].
CRYSTALLINE STRUCTURE OF THE γ-FORM OF TITANIUM TRICHLORIDE. 25 Feb 63 [16]p. 5 refs.
Order from SLA $1.60 63-18387

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe di Scienze Fiziche, Matematiche e Naturali. Rendiconti (Italy) 1959, ser. 8, v. 26, p. 155-163. Another trans. is available from SLA mi$1.80, ph$1.80 as 61-14479 [1961] 10p.

DESCRIPTORS: *Crystal structure, *Titanium compounds, *Chlorides, Ziegler catalysts.

In conjunction with studies of $TiCl_3$ as a component in catalyst systems for stereospecific polyolfin synthesis, it was demonstrated that the γ form presents a remarkable structural analogie with the α form, which justifies the color (violet), the density and the closely analogous chemical behavior.

Schnering, H. G. and Wohrle, H.
THE CRYSTAL STRUCTURE OF $MoCl_3$. [1963] 2p
Order from SLA $1.10 63-18169

Trans. of Naturwissenschaften (West Germany) 1963, v. 50, no. 3, p. 91.

DESCRIPTORS: *Molybdenum compounds, *Chlorides, Crystal structure, Structural properties.

A structure determination was carried out on $MoCl_3$ by measuring the intensities of the reflections (hk0) and (0kl) photometrically, using MoK α radiation. Syntheses according to Patterson, differential syntheses, Fourier syntheses and difference syntheses according to (001) and (100) led stepwise to the final coordinates of the Mo and Cl particles. $MoCl_3$ forms a layer lattice of an unknown type. The layers run parallel to (001). The anions are arranged in hexagonal close packing. The arrangement of the Mo-particles within the cation layer corresponds in principle to that of the C-atoms in graphite, but differs from the latter in a remarkable manner: Two Mo^{3+} particles approach each other to a distance of 2.77 Å; in this manner the 6-fold symmetry is lowered to a 2-fold one, corresponding roughly to the transition of benzene to quinone. The distance between the nearest neighbors of two different pairs is 3.70 Å. Each Mo^{3+} particle is surrounded in a distorted octahedron by Cl^- particles (two each at 2.40, 2.45, 2.55 Å). The shortest Cl – Cl distances are 3.23 Å. (Extracted)

Shuvalov, Yu. N.
INVESTIGATION OF ELECTRON DENSITY DISTRIBUTION IN A CRYSTAL [K Issledovaniyu Raspredeleniya Elektronnoi Plotnosti v Kristalle]. [1963] 9p.
Order from ATS $8.25 ATS-80Q70R

Trans. of Leningrad U. Vestnik (USSR) 1958, v. 13, no. 4, Ser[iya] Fiz[ika] i Khim[ii] [no. 1] p. 36-44.

DESCRIPTORS: *Crystals, *Electron density.

Smekal, Adolf.
ELECTROPHYSICS OF SOLID SUBSTANCES, II. [1963] 48p (formulae omitted) 384refs
Order from SLA $4.60 63-20150

Trans. of [Physik in Regelmässigen Berichten] (Germany) 1940, v. 8, no. 4, p. 127-148.

DESCRIPTORS: *Solids, *Ions, *Conductors, Crystal structure, Crystal lattices, Surfaces, Crystal lattice defects, Diffusion, Glass, Temperature, Transport properties, Thermal conductivity, Chemical bonds.

Tesner, P. A. and Echeistova, A. I.
STUDY ON THE GROWTH PROCESS OF CARBON-BLACK PARTICLES BY MEANS OF AN ELECTRON MICROSCOPE [Izuchenie Protsessa Rosta Sazhevykh Chastits pri Pomoshchi Elektronnogo Mikroskopa]. [1963] 4p. 6 refs.
Order from OTS or SLA $1.10 63-18409

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1952, v. 87, no. 6, p. 1029-1031.
Another trans. is available from HB as HB-3222

DESCRIPTORS: *Carbon black, Growth, Electron microscopy, Pyrolysis, Particle size, *Whiskers (Crystallography), *Crystal growth.

Vul'f, B. K. and Romadin, K. P.
PRINCIPLES OF THE DISLOCATION THEORY. 12 Sep 63, 11p. JPRS: 21051.
Order from OTS $0.50 63-31748

Trans. of mono. Aviatsionnoe Metallovedenie (Aviation Metal Science) Moscow, 1962, chap 3, p. 125-133.

DESCRIPTORS: *Metallic crystals, Tensile properties, *Crystal lattice defects, Theory, Crystallization, Crystal growth.

Theoretical Physics

D'yakov, S. P.
ON THE STABILITY OF SHOCK WAVES (Ob Ustoichivosti Udarnykh Voln). [1963] 19p
Order from OTS or SLA $1.60 63-18936

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1954, v. 27, no. 3(9) p. 288-295.
Other translations are available from SLA mi$2.40, ph$3.30 as 59-17557, AERE Lib/Trans-648, 1956 [15p] and as RT-4295, 13p.

DESCRIPTORS: *Shock waves, Stability, Acoustics, Velocity, *Equations, Entropy, Partial differential equations, Adiabatic gas flow, Mathematical analysis, *Mechanical waves.

Neumann, J. V.
PROOF OF THE ERGODIC PRINCIPLE AND THE H-THEOREM IN THE NEW MECHANICS. [1963] 49p. 23 refs.
Order from SLA $4.60 63-18155

Trans. of Zeitschrift für Physik (Germany) 1929, v. 57, p. 30-70.

DESCRIPTORS: *Statistical mechanics, *Quantum mechanics, *Measure theory, Phase studies, Probability, Mechanics, Thermodynamics.

Resolution of the ficititious contradiction between the macroscopic definition of phase space and the existence of uncertainty relations is shown. Principal concepts of statistical mechanics are reinterpreted according to quantum-mechanics. The ergodic principle and the H-theorem are formulated and proved without considering "assumptions on disorder". The physical meaning of mathematical conditions which determine range of validity is discussed. (Author)

Silin, V. P.
INVESTIGATION OF THE SPECTRUM OF A MANY-PARTICLE SYSTEM BY THE METHOD OF THE QUANTUM KINETIC EQUATION. [1963] 122p. 44 refs
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R7. When supply is exhausted, order from OTS or SLA $10.00, 63-18469

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. Trudy, 1955, v. 6, p. 199-268.

DESCRIPTORS: *Quantum statistics, *Statistical mechanics, *Quantum mechanics, Dynamics, *Equations, Statistical functions, *Charged particles, Plasma physics, Relativity theory, N-body problem.

A study is devoted to an analysis of the spectrum of weakly excited states of a many-particle system by means of the quantum kinetic equation with self-consistent interaction. Studied are certain basic properties of a quantum distribution function, by which is understood a density matrix in a mixed representation, which is a function of the coordinates and the momenta. Studied also are volume excitations at high temperatures disregarding quantum effects. Solutions of the dispersion equation obtained for a system of Bose and Fermi particles at a temperature equal to zero are presented. The results obtained relate both to the quantum and the classical area of physics.

Tomonaga, Shinichiro.
QUANTUM MECHANICS, tr. by Koshiba. 1962, 326p
Order from Interscience Publishers, Inc., 250 Fifth Ave., New York, 1, N. Y. $12.50

Trans. of unidentified Japanese mono., n. p., n. d.

DESCRIPTORS: *Quantum mechanics

Wave Propagation

Alpert, Ya. L.
ON THE THEORETICAL COMPUTATION OF THE FIELD OF LOW FREQUENCY ELECTROMAGNETIC WAVES OVER THE EARTH'S SURFACE [O Teoreticheskikh Raschetakh Polya Elektromagnitnykh Voln Nizkoi Chastoty nad Zemnoi Poverkhnost'yu]. [1962] [6p] 6refs MDF A-107.
Order from OTS or SLA $1.10 63-24051

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 97, no. 4, p. 629-632.

DESCRIPTORS: *Electromagnetic waves, Low frequency, Propagation, Atmosphere, Atmospherics, Numerical analysis, Theory

Hertz, H. H.
ELECTRIC WAVES, BEING RESEARCHES ON THE PROPAGATION OF ELECTRIC ACTION AND FINITE VELOCITY THROUGH SPACE, tr. by D. E. Jones. 1962, 278p
Order from Dover Publications, Inc., 180 Varick St., New York, 14, N. Y. $1.75

Trans. of unidentified German mono., n. p., n. d.

DESCRIPTORS: Propagation, *Electric currents, Electric potential, *Electricity.

Kashprovskii, V. E.
LOCAL SOIL CONDUCTIVITY AND ITS DISTRIBUTION ON USSR TERRITORY. 11 Oct 63, 19p 13 refs JPRS: 21428.
Order from OTS $0.50 63-31932

Trans. of #Geomagnetizm i Aeronomiya (USSR) 1963, v. 3, no. 2, p. 297-308.

DESCRIPTORS: *Soils, *Radio waves, *Electrical conductance, Distribution, Terrestrial magnetism, Mapping, Absorption, Mathematical analysis, Propagation.

The article discusses the behavior of radio waves at the surface of the soil-air environmental boundary, and the process of their penetration of the soil. A concept is given of the effective conductivity of soil at high frequencies, based on the theory of the skin effect in laminate media. These principles are at the basis of the method of measuring soil conductivity and enable conversion of the results of measurements made by the so-called electrical sonding of the soil at low frequency. Analysis of measurements made on the territory of the USSR indicated that the data obtained correlate very well with soil types, which enabled development of a map of local electric soil conductivity of the USSR. This map is sufficiently universal, and may be used both for computing the fields of radio stations and for computing grounding and antenna equipment, etc. (Author)

Wallot, J.
VERTICAL PASSING OF ELECTROMAGNETIC WAVES THROUGH A LAYER WITH SPACE-VARIABLE DIELECTRIC CONSTANT [PT. 4]. [1963] 31p 25 refs
Order from SLA $3.60 63-20349

Trans. of Annalen der Physik (Germany) 1919 [ser. 4] v. 60, p. 734-762.

DESCRIPTORS: *Electromagnetic waves, Propagation, Reflection, Dielectric properties, Integrals.

Kouzov, D. P.
DIFFRACTION OF A PLANE HYDROACOUSTIC WAVE AT THE BOUNDARY OF TWO ELASTIC PLATES. 9 Sep 63, 10p. 7 refs. JPRS: 20981.
Order from OTS $0.50 63-31707

Trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1963, v. 27, no. 3, p. 541-546.

DESCRIPTORS: *Diffraction, Wave analysis, *Hydrodynamics, *Acoustics, Elasticity, Boundary value problems.

The paper treats the diffraction of hydroacoustic waves at straight-line discontinuities (crack, welded connection of two layers of different thickness) in an elastic layer. The case of low frequencies of the incident disturbance--i.e., frequencies for which the wave-length in the material of the layer is much larger than the thickness of the layer--is examined. The introduction of such a restriction permits a transition from the contact problem for two media (liquid-elastic solid) to the boundary-value problem for one medium--fluid--the surface boundary conditions for which are determined on the basis of the vibration equation of an infinitely thin elastic plate. (Author)

Ville, J.
ANALYTICAL SIGNALS WITH LIMITED SPECTRUM. [1962] 22p.
Order from SLA $2.60 62-20206

Trans. of Cables et Transmission (France) 1950, v. 4 [no. 1] p. 9-23.

DESCRIPTORS: *Signals, Distortion, *Wave transmission, Mathematical analysis.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACCOUNTS OF COSMIC FLIGHTS OF "VOSTOK-5" AND "VOSTOK-6" AND IONIZING RADIATION IN COSMIC FLIGHTS. 18 Sep 63, 21p JPRS: 21138.
Order from OTS $0.75 63-31785

Trans. of Priroda (USSR) 1963 [v. 52] no. 7, p. 11-28.

DESCRIPTORS: *Space flight, *Radiation effects, *Space medicine, *Conferences, Astronauts, Spacecraft, Closed-cycle ecological systems.

Contents:
Brief diary of flights of Cosmonauts V. F. Bykovskii and V. V. Tereshkova
Press Conference on Flights of "Vostok-5" and "Vostok-6"
Cosmic flights and ionizing radiation, by A. V. Lebedinskii and Yu. G. Nefedov.

ANNIVERSARY MEETING OF ACADEMY OF SCIENCES USSR. 19 Aug 63, 8p. JPRS: 20725.
Order from OTS $0.50 63-31577

Trans. of Priroda (USSR) 1957 [v. 46] no. 12, p. 107-111.

DESCRIPTORS: *Scientific organizations, Scientific personnel, Scientific research, Siberia.

A general discussion of proposed research institutes for the new scientific center near Novosibirsk, Siberia. Some of the fields of study will be mathematics, physics, chemistry, mechanics, economics, engineering, biology, and medicine. Tasks and problems to be solved are enumerated.

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY [SELECTED] TRANSLATIONS NO. 53. 8 Oct 63, 32p JPRS: 21363.
Order from OTS $1.00 63-31899

Trans. of Sheng Wu Hsüeh T'ung Pao (Chinese People's Republic) 1963, no. 1, p. 16, 57; and from Chung Kuo Hsin Wen (Chinese People's Republic) 1963, 10 Aug, p. 7-8; 13 Aug, p. 9; 15 Aug, p. 11-12; 16 Aug, p. 16; Kuang Ming Jih Pao (Chinese People's Republic) 1963, 23 Aug, p. 2.

DESCRIPTORS: *Scientific research, *China, Insects, Heart, Surgery, Students, Medical personnel, Buildings, Structures, Fracture (Mechanisc), Therapy, Plants (Botany), Ecology, *Conferences, Biology.

Contents:

Mr. and Mrs. P'u; professors on entomology, by Lin Mi
Heart surgeon Shih Mei-hsin
350 minority race students graduated from colleges in Yunnan provice
A future returned overseas Chinese doctor
The cause and prevention of cracks in building structures, by T'ao I-chung
National Academic Conference on Cracks in Building Structures convened in Shanghai, by Wang Min-chih
Academic symposium (in Tsinghai) on Chinese Traditional Medical Therapy (no. 1)
Conference on Plant Ecology and Geobotany sponsored by the Chinese Botanical Society in Peking, by Chin Hung-chih and Chang Ching-wei
Scientific meetings of the Chinese Zoological Society and the Chinese Entomological Society held jointly in Canton, by Hsieh Chung-ping.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, INSTRUMENT BUILDING SERIES, 1962, VOL. 5, NO. 3. 11 Sep 63, 267p. JPRS: 21014.
Order from OTS $4.00 63-31726

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1962, v. 5, no. 3, p. 3-157.

DESCRIPTORS: *Precision equipment, *Instrumentation *Scientific research, Radio equipment, Measuring devices (Electrical and Electronic), Oscillators, Computers, Optical instruments, Temperature sensitive elements, Impact shock, Conferences, Automation.

Contents:

Use of the shadow method with time modulation for measuring the diameter of thin wires, by S. D. Rodkevich, and B. S. Karasik
Compensation of temperature errors for rectifier photocells using semiconductor thermistors, by V. V. Tereshin
A device for measuring resistance and resistance uniformity along the length of uninsulated wires, by S. I. Zilitinkevich and others
The threshold sensitivity of photoelectric flux meters, by A. N. Tkachenko
Instrument for displaying AC vectors, by T. M. Aliev and V. P. Stepanov
Investigation of the properties of a diaphragm-type electrokinetic transducer, by M. S. Kasim-Zade
Analysis of the operation of an electronic very-low-frequency oscillator with limiting, by A. A. Vavilov and A. I. Solodovnikov
Additive binary-decimal codes with two negative weights, by D. A. Pospelov
Shaft information encoders with reflected coding systems with base greater than two, by L. V. Zhdanov
Transformation of related static errors in analog computers, by A. N. Lebedev
Application of spectral transformations to the determination of correlation functions of low-frequency random processes, by A. I. Komarov
On the vacuum in a gyro chamber and the problem of the aerodynamic resistance of a gyro motor, by A. G. Bessonov
One of the methods of determining the dimensions of a dispersion figure given by optical systems, by A. Ya. Nodel'man
Determination of aberrational vignetting in systems with a telecentric ray path, by Yu. P. Kaspar'yants
The properties of a two-component objective with an external entrance pupil, by O. N. Vasilevskii
Methods of determining the surface temperature, emissivity, and thermal conductivity of labile, thin surface deposits, by R. S. Prasolov
A dynamic biocalorimeter for studying heat exchange of warm blooded animals, by A. M. Mindlin
Impact tests on measuring instruments, by V. S. Novoselov
A mechanism for realization of functions of two variables, by Yu. P. Borenshtein
Conference on automatic control and methods of electrical measurement (no. 3) Novosibirsk, Sep 61, by S. T. Vas'kov

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, INSTRUMENT BUILDING SERIES, 1963, VOL. 6, NO. 1. 18 July 63, 160p. JPRS: 20221.
Order from OTS $3.00 63-31313

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1963, v. 6, no. 1, p. 1-160.

DESCRIPTORS: *Precision equipment, *Instrumentation, Scientific research, *Electronics, Control systems, *Analog computers, Voltmeters, Electron tubes, *Transistors, Silicon, Electronic relays, Energy, *Sequences, *Integrators (Computers), Ferrites, *Digital computers, *Cybernetics, Torque, *Gyroscopes, *Flowmeters, Tachometers, *Optical instruments, Images, Binoculars, Thermocouples, *Optical equipment, Errors, Surface temperatures, Low pressure research, Gases, Viscosity, Analysis, *Electroencephalographs.

Contents:

A new method of measuring the slope of the characteristic of an electronic tube, by Ya. I. Tetel'baum
An electrocorona voltmeter, by F. Ya. Izakov
Aspects of the use of silicon transistors for converting small D.C. signals to A.C., by N. S. Nikolaenko and V. P. Fedotov
Calculation of the parameters of a multipoint proportional relay regulator for an object with delay, by D. Balkani and L. P. Smol'nikov
Use of analog computers for the experimental determination of the parameters of dynamic links, by V. M. El'yasberg
Use of the integral-energy criterion in some control problems, by B. A. Aref'ev
Method of parallel conversion of a binary reflex code to the ordinary binary system, by L. V. Zhdanov
Parametric compensation of leakage in RC integrators, by Yu. A. Tarasov
The arithmetic unit of a specialized digital computer containing ferrite-transistor units, by A. M. Kayumov
An electronic extremal system of stepping type, by A. A. Bessonov
Motion of a gyroscope under the torque of reaction forces, by O. I. Komarnitskaya
Effects of motor torque on the motion of a gyroscope in a cardan frame, by V. A. Pavlov
The main aspects of the design and study of tachometer flowmeters, by L. L. Boshnyak

A device for producing an image in perspective, by G. M. Kolmakova
An apochromatic catadioptric system to replace a parabolic mirror, by V. N. Churilovskii and K. I. Gol'dis
Tolerances on the mutual adjustment of systems with displaced exit pupils in binocular instruments, by Yu. A. Utekhin
Effects of loss of heat along the detector on the error of measurement of a surface temperature, by N. A. Yaryshev
Viscosity of a gas at low pressures, by R. S. Prasolov
Methods and instruments for the analysis of electroencephalograms, by V. A. Pryanishnikov

SCIENTIFIC ACTIVITIES IN THE LATVIAN SSR. 6 Sep 63, 35p. JPRS: 20957.
Order from OTS $1.00 63-31695

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1962, no. 10(183) p. 147-148; no. 12(185) p. 138; 1963, no. 3[188] p. 3-14; Nauka i Tekhnika (Latvian SSR) 1963, no. 1, p. 3-4.

DESCRIPTORS: *Scientific research, Science, *Scientific organizations, *Conferences

Contents:
In the presidium of the Academy of Sciences, Latvian SSR, July-Aug 62, by J. Magone
In the presidium of the Academy of Sciences, Latvian SSR, Nov 62, by J. Magone
Greater effectiveness in scientific research, by M. Raman
Basic results of the scientific activity of the Academy of Sciences of the Latvian SSR for 1962, by K. Plaude.

TRANSLATED SWISS PATENTS (FIRST CLAIM ONLY) [Nov 63] [114p].
Order from OTS $2.50 63-11196

Trans. of Swiss patents including patent number, class number, name and residence of patentee and patent owner, title, filing and priority date, and first claim. Excluded are those patents bearing priority dates from Australia, Austria, Canada, Great Britain, United States, and West Germany.

DESCRIPTORS: *Patents, Inventions, *Switzerland, Chemical engineering, Railroads, Electrical engineering, Furnaces, Medical supplies, Metallurgy, Construction, Rubber, Plastics, Precision instruments, Agricultural machinery, Machines, Material forming, Pumps, Aircraft, Vehicles

TRANSLATIONS ON COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY NO. 54. 14 Oct 63, 58p (figs omitted) 25refs JPRS: 21435.
Order from OTS $1.50 63-31933

Trans. of Ch'i Hsiang Hsüeh Pao (Chinese People's Republic) 1963, v. 33, no. 2, p. 145-151; [Chih Wu Hsüeh Pao] (Chinese People's Republic) 1963, v. 11, no. 2, p. 113, 177; K'o Hsueh T'ung Pao (Chinese People's Republic) 1963, no. 5, p. 28-34; Sheng Wu Hsüeh T'ung Pao (Chinese People' Republic) 1963, no. 2, p. 18; [T'u Jang Hsüeh Pao] (Chinese People's Republic) [1963] v. 11, no. 2, p. 214; Wu Hsien Tien (Chinese People's Republic) 1963, no. 1, p. 1; no. 3, p. 1-5; no. 4, p. 1, 9, 11.

DESCRIPTORS: *Scientific research, *China, Plants (Botany), Meteors, Electronics, Radio receivers, Control theory, Air mass analysis, Tracer studies, Soils, Photosynthesis, Desoxyribonucleic acids.

Contents:
A debate on plant colonies and their physiology, by Wang Tien-to
Introducing meteoric ionization communication, by Chin Ch'uan
The theory of control and radio electronics, by Ch'en Chung-chi
Hai Ho brand 356-model 5-tube alternating current radio receiver, by Yu Wen
Develop amateur radio manufacturing activity, by Chang Wen-hua
A brief report on Trace Elements Research Work Conference, by Wu Chao-ming
The function of non-linear effects on the formation of blocking situation, by Yeh Tu-cheng and Ch'en Hsiung-shan
Study of hydrogen sulfide in rice soils by means of the radioactive isotope S^{35}, by Wu Chun and Ch'u China-hai (abstract)
Use of C^{14} in studying distribution and translocation of photosynthesis assimilates in the soybean, by Ch'en Ch'uan-iung (abstract)
Autoradiographic study of the synthesis of nuclear acids and proteins in the cells of allium cepa l. inmeiosis and mitosis, by Li Pao-chien (abstract).

Murgulescu, I.
PERSPECTIVES FOR SCIENTIFIC RESEARCH IN RUMANIA. 10 Oct 63, 19p JPRS: 21391.
Order from OTS $0.50 63-31908

Trans. of Lupta de Clasa (Rumania) 1963 [v. 43] no. 8, p. 23-35.

DESCRIPTORS: *Scientific research, *Rumania.

Radulet, Remus.
PROBLEMS OF EFFICIENCY IN TECHNICAL RESEARCH. 3 Oct 63, 5p JPRS: 21312.
Order from OTS $0.50 63-31877

Trans. from Rominia Libera (Rumania) 1963, no. 5830, 14 Jul, p. 1-2.

DESCRIPTORS: *Scientific research, Machines, *Research program administration.

Regnier, A.
CONCENTRATOR OF 200 SUBSCRIBER'S LINES USING REED RELAYS AS CONNECTIONS. [1963] 22p.
Order from SLA $2.60 63-18482

Trans. of Commutation et Électronique (France) 1962, no. 3, p. 53-62.

DESCRIPTORS: *Telephone equipment, *Polarized relays, Telephone communication systems, Coupling circuits.

The concentrator described in this article assures the link between 200 subscribers' lines and the exchange through a group of 24 concentration lines. It is of the "semi-electronic" type, i.e., it possesses a speech network assuring metallic link between subscriber's station and exchange and set in place by an electronic control circuit. The connection chosen for the speech network uses two sealed contacts and a magnetic connection control device. Holding a call put through therefore requires no consumption of current; the power necessary for operation of the electronic control circuit can be supplied by the exchange over several specialized pairs which are also used for signaling between exchange and concentrator. (Author)

SOCIAL SCIENCES

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 70. 6 Sep 63, 12p.
JPRS: 20942.
Order from OTS $0.50 63-31683

Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 6, p. 20-22; from Izvestiya (USSR) 1963, 18 July; 21 July, p. 5; Sovetskaya Kirgiziya (USSR) 1963, 25 July, p. 1.

DESCRIPTORS: *Industrial production, *Economics, Machine tools, Industrial equipment, Effectiveness, Nuclear industrial applications, Pumps, Machine tool industry.

Contents:
Machine-tool building in Armenia, by P. Pook
Inefficient utilization of equipment in Azerbaidzhan, by A. Asadullaev and others
Harnessing the Atom, by V. Emel'yanov
Mobile pumping station
First machine-tool plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 71. 11 Sep 63, 36p.
JPRS: 21032.
Order from OTS $1.00 63-31733

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 6, p. 76-85; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 5, p. 10-12; from Ekonomicheskaya Gazeta (USSR) 1963, no, 29[102] p. 3, 37; Pravda, Moscow (USSR) 1963, 16 July, p. 2; 17 July, p. 1-2.

DESCRIPTORS: *Industrial production, *Economics, Standardization, Data processing systems, Automation, Transportation, Handling, Personnel management, Management engineering.

Contents:
Conference on Group Processing Parts, Mar 63, by O. G. Babushko
Mechanization of reference information, by Yu. B. Kotel'nikov
Automated transportation and handling, by P. A. Mudrov
Moskovskii sovnarkhoz reports on industrial technology for 1962, by I. V. Gellert
Leningradskii sovnarkhoz effects savings through automation and mechanization, by V. A. Ivanov
Expanding the initiative of the masses, by V. Sukhov
Decisions of the CC of the CPSU November Plenum in practice, by G. Kazaryan
Successful formation of objectives of the Seven-Year Plan
Mismanagement and irresponsibility, by P. Arkhipov
Economic activities of party discuss fundamental directions of plan.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 72. 30 Sep 63, 35p.
JPRS: 21250.
Order from OTS $1.00 63-31844

Trans. of 13 selected articles from 1963 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Economics, Logistics, Brick, Industrial plants, Soldering, Iron, Concrete, Asphalt, Powder metallurgy, Chemical industry.

Contents:
Industrial production in the Leningradskii sovnarkhoz
Increase in Angarsk production, by R. Vainer
Synthetic materials needed for Leningrad
The problem of reserves, by V. Vorotnikov
Kazakh production figures
What will the enlargement of Irkutsk brick plants yield, by L. Petrachkov and G. Anishchenko
Soldering iron production, by N. Rodionov
Uzbek plants criticized, by Sh. Rashidov
Penza production amalgamation
New Georgian asphalt-concrete plant
Centralized production of small-grained powders is necessary
Riga production figures
Development and specialization of heavy industry in the Central Asian economic region, by P. Kalyakin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 73. 1 Oct 63, 14p
JPRS: 21267
Order from OTS $0.50 63-31853

Trans. of Poligraficheskoe Proizvodstvo (USSR) 1963, no. 7, p. 4-6; Standartizatsiya (USSR) 1963 [v. 27] no. 7, p. 51-54.

DESCRIPTORS: *Industrial production, *Economics, Standardization, Display systems, Printing, Machines.

Contents:
Standardization and normalization exhibit in Leningrad, by R. P. Stukalov
An improved machine building foundation is needed by the typographical industry, by G. P. Smirnov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 74. 8 Oct 63, 61p
JPRS: 21368.
Order from OTS $1.75 63-31901

Trans. of Narodnoe Khozyaistvo Uzbekistana (USSR) 1963 [v. 5] no. 6, p. 3-9 and 14 selected articles from 1963 issues of 10 Russian newspapers.

DESCRIPTORS: *Industrial production, *Economics, Industrial relations, Management engineering, Metallurgy, Plastics, Machines, Natural resources, Industries.

Contents:
The economy of Magadanskaya oblast, by P. Afanas'ev
Cooperation in heavy, power-engineering and transport machine building, by A. Topchiev
Wastage in the Donetskii sovnarkhoz, by G. Gogenko
Drawing up the draft economic plan, by P. Amel'kin
Lithuania is forming a draft plan on a solid foundation of popular initiative, by A. Drobins
Economic planning in Lipetskaya oblast, by M. Cherkasov
Economic plan in Kievskii economic region
Party-state checking in action
Planned advances in industry
Development in Leningrad metallurgical industry, by N. Pavlov
Plastics and machinery, by V. Vadachkoriya and Yu. Lopatin
News briefs
Searching our reserves and putting them into operation in central Asia, by S. Kadyshev

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 75. 9 Oct 63, 50p
JPRS: 21384.
Order from OTS $1.50 63-31907

Trans. of 13 selected articles from Aug 63 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Economics, Budgets, Management engineering, Employee fringe benefits, Industrial plants.

Contents:
Moscow City 1963 six months plan fulfillment
Services offered
Economic development in Siberia, by V. Ksintaris
Production awards in the Ukrainian SSR
Ukrainian industrial progress
Economic development in the Estonian SSR, by V. Kyao
Lyubertsy Economic Conference
Economic development in the Buryat Autonomous Republic, by N. Biryukov
Planning for 1964 and 1965 in the Donetskii economic region, by N. Khudosovtsev
Amalgamated factories in the Ukraine
Armenian production pledges
Economic planning in the Kazakh Republic, by B. Bratchenko
Economic progress in the Armenian SSR, by A. Sayadyan.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 76. 14 Oct 63, 57p
JPRS: 21441.
Order from OTS $1.50 63-31936

Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 7, p. 8-19 and 8 selected articles from 1963 issues of 6 Russian newspapers.

DESCRIPTORS: *Industrial production, *Economics, Shale, Machines, Budgets, Management engineering, Textile industry, Automation, Metals, Universities, Industries.

Contents:
Shale production in Estonia
Latvian industrial successes, by G. Gaile
Lithuanian industry, by P. Kul'vetis
Specialization in machine building, by R. Godelaitis
The Soviet Baltic region is growing, by V. Sitchikhin
The new industry of Estonia, by A. Veimer
Seven Year Plan, after four years and seven months
How will the fuel-power economy develop, by E. Kreslin
Planning capital investments, by E. Shaginyan
Planning: a matter of the utmost importance
Technical lag in machinery for the textile industry, by B. Chertkov
Automation of the light industry, by S. Gurevich
The metals supply problem of the central Asian sovnarkhoz, by G. Finkel'shtein
Technical school must strengthen leadership
Galvanizing shop of the Belaya Tserkov' metal products plant, by A. Makashov.

Barash, Ya. B.
CONTRACTS FOR RESEARCH AND DESIGN WORK: FEATURES OF CONTRACTS FOR THE FULFILLMENT OF SCIENTIFIC RESEARCH AND DESIGN PRODUCTS [AND] SETTLEMENT OF ACCOUNTS FOR SCIENTIFIC RESEARCH AND DESIGN WORK.
8 Aug 63, 28p. JPRS: 20549.
Order from OTS $0.75 63-31480

Trans. of mono. Dogovori na Vypolnenie Nauchno-Issledovatel'skikh i Konstruktorskikh Rabot (Contracts for the Fulfillment of Scientific Research and Design Projects) Moscow, 1962, p. 7-19, 53-69.

DESCRIPTORS: *Scientific research, *Design, *Economics, Budgets, Costs.

Pribluda, A. S.
LEGAL ASPECTS OF SCIENTIFIC RESEARCH AND EXPERIMENTAL DESIGN WORK. 12 Sep 63, 11p.
JPRS: 21055.
Order from OTS $0.50 63-31751

Trans. of Sovetskoe Gosudarstvo i Pravo (USSR) 1958, no. 1, p. 27-34.

DESCRIPTORS: *Research program administration, *Procurement, Commerce, *Industrial procurement, Economics, Industrial relations, Standards, Scientific research, Collaboration.

The legal aspects of contract relations between scientific research organizations and industry, the contents of the contract and the specific requirements with respect to the size and the quality of research, the procedures for the submission and acceptance of completed projects, financing and estimating, and the responsibility are discussed.

Documentation

MODERN COMMUNIST CHINESE USAGE: CHINESE-ENGLISH DICTIONARY, 2D ED. 4 Sep 63, 831p. JPRS: 20904.
Order from OTS $9.25 63-31674

Trans. of mono. Chinesisch-Deutsches Worterbuch (Han Te Tz'u Tien) 2d ed., Peking, 1960, 831p.

DESCRIPTORS: *Dictionaries, *Language, *China

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6341
Shubenko-Shubin, Leonid Aleksandrovich and others.
STRENGTH OF STEAM ENGINE PARTS (Prochnost' elementov parovykh turbin) Moscow, Mashgiz, 1962. 567p. Errata slip inserted. 4000 copies printed.

BR-SOV/6342
Pisarneko, Georgiya Stepanovich and others.
STRENGTH OF SINTERED MATERIALS AND ALLOYS AT ROOM AND HIGH TEMPERATURES (Prochnost' metallokeramicheskikh materialov i splavov pri normal'nykh i vysokikh temperaturakh) Kiyev, Izd-vo Akademii nauk UkrSSR, 1962. 274p. Errata slip inserted. 2400 copies printed.

BR-SOV/6343
Smelyanskiy, Matvey Yakovlevich and others.
VACUUM ARC FURNACES AND ELECTRON-BEAM MELTING UNITS (Dugovyye vakuumnyye pechi i elektronnyye plavil'nyye ustanovki) Moscow, Metallurgizdat, 1962. 210p. Errata slip inserted. 2400 copies printed.

BR-SOV/6344
Alekseyeva, O. G., A. F. Bibikova and others.
A CASE OF ACUTE RADIATION SICKNESS IN MAN. (Sluchay ostroy luchevoy bolezni u cheloveka) Moscow, Medgiz, 1962. 149p. 10,000 copies printed.

BR-SOV/6346
Bol'shakov, Gennadiy Fedorovich, and Yekaterina Aleksandrovna Glebovskaya
HETERO-ORGANIC COMPOUNDS IN JET FUELS (Geteroorganicheskiye soyedineniya reaktivnykh topliv) Leningrad, Gostoptekhizdat, 1962. 219p. Errata slip inserted. 1800 copies printed.

BR-SOV/6351
Panasenko, Fedor Lavrent'yevich
MANUFACTURE OF COLD-ROLLED STEEL SHEETS (Proizvodstvo kholodnokatanoy listovoy stali) Khar'kov, Metallurgizdat, 1962. 302p. 3000 copies printed.

BR-SOV/6352
COLLECTED PAPERS ON NOMOGRAPHY, NO. 1. (Nomograficheskiy sbornik) Moscow, 1962. 248p. 1800 copies printed.

BR-SOV/6354
Mikulinskiy, Aron Semenovich
ELECTRIC VACUUM FURNACE FOR PRODUCING ALKALI AND ALKALI-EARTH METALS (Vakuumnyye elektricheskiye pechi dlya polucheniya shchelochnykh i shchelochnozemel'nykh metallov). Moscow, Gosenergoizdat, 1962. 96p. ("Biblioteka elektrotermista," vyp. 14) Errata slip inserted. 4500 copies printed.

BR-SOV/6357
Bobrov, Nikolay Nikolayevich, and Petr Ivanovich Voropay
THE USE OF FUELS AND LUBRICANTS (Primeneniye topliva i smazochnykh materialov) Moscow, Gostoptekhizdat, 1962. 346p. Errata slip inserted. 8180 copies printed.

BR-SOV/6358
RANDOM PROCESSES IN NONLINEAR AUTOMATIC SYSTEMS (Sluchaynyye protsessy v nelineynykh avtomaticheskikh sistemakh) Moscow, Fizmatgiz, 1962. 351p. 12,000 copies printed.

BR-SOV/6361
Generson, Isaak Getselevich
MANUFACTURE OF FORGINGS FOR TURBINE AND COMPRESSOR DISCS (Proizvodstvo pokovk turbinnykh i kompressornykh diskov) Moscow, Mashgiz, 1962. 277p. Errata slip inserted. 2500 copies printed.

BR-SOV/6363
Zhetvin, Nikita Petrovich, and others.
ARMCO IRON (Tekhnicheski chistoye zhelezo) Moscow, Metallurgizdat, 1962. 198p. Errata slip inserted. 2750 copies printed.

BR-SOV/6364
Gallay, M. L.
SPECIAL FEATURES IN PILOTING JET AIRCRAFT (Osobennosti pilotirovaniya reaktivnykh samoletov) Moscow, Izd-vo DOSAAF, 1962. 195p. Errata slip inserted. 7600 copies printed.

BR-POL/6365
Markowski, Waclaw
THE PRINCIPLES OF FLIGHT IN HIGH-SPEED AIRCRAFT (Zasady lotu samolotow szybkich) [Warsaw] WMON, 1959. 44p. 1500 copies printed.

BR-SOV/6368
Rusanov, Vladimir Dmitriyevich
MODERN METHODS IN PLASMA RESEARCH (Sovremennyye metody issledovaniya plazmy) Moscow, Gosatomizdat, 1962. 182p. Errata slip inserted. 6300 copies printed.

BR-SOV/6369
Vitinskiy, Yuriy Ivanovich
FORECASTING SOLAR ACTIVITY (Prognozy solnechnoy aktivnosti) Moscow, Izd-vo AN SSSR, 1963. 150p. Errata slip inserted. 1700 copies printed.

TRANSLATIONS IN PROCESS

HANDBOOK FOR THE CALCULATION OF REACTOR PROTECTIONS (1963). (Formulaire sur le Calcul de la Protection des Reacteurs (1963)).
C[ommissariat a l']E[nergie]A[Tomicue] (France) no. 2253, 1963, 247p.

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 9: SELECTED ARTICLES.
Vestnik Svyazi (USSR) 1963, [v. 23] no. 9.

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 10: SELECTED ARTICLES.
Vestnik Svyazi (USSR) 1963 [v. 23] no. 10.

HERALD OF THE ACADEMY OF MEDICAL SCIENCES, 1963, VOL. XVIII, NO. 10.
Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 10.

NEUTRON DOSIMETRY: SELECTED PAPERS.
Conference on Neutron Dosimetry, Harwell, 10-14 Dec 62. Proceedings, v. 1, p. 13-24, 71-80, 181-193, 253-260, 271-276, 293-305, 337-343, 455-460, 481-499. (STI/PUB/69, v. 1)

[NEWS OF INSTITUTES OF HIGHER LEARNING. RADIOPHYSICS] 1963, VOL. VI, NO. 3.
Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1963, v. 6, no. 3.

RADIATION DAMAGE IN SOLIDS AND REACTOR MATERIALS: SELECTED PAPERS.
Conference on Radiation Damage in Solids and Reactor Materials, Vienna, 7-11 May 63. Proceedings, v. 3, p. 3-14, 43-48, 103-120, 147-162 (STI/PUB/56, v. 3).

RADIOISOTOPIC METHODS FOR AUTOMATIC CONTROL. REPORTS OF ALL-UNION CONFERENCE ON APPLICATIONS OF RADIOISOTOPES IN MEASURING TECHNIQUES AND INSTRUMENTS, JUNE 1961.
Mono. Radioizotopnye Metody Avtomaticheskogo Kontrolya. Trudy Rasshirennogo Soveshchaniya Vsesoyuznogo Seminara po Primeneniyu Radioaktivnykh Izotopov v Izmeritel'noi Tekhnike i Priborostroenin, Iyun', 1961, II, n.p., 1962, 235p. (MSF-160).

RESEARCH ON SAND CONTROL, NO. 5.
Chih Sha Yen Chiu (Chinese People's Republic) 1963, no. 5, 108p.

SCIENTIFIC-TECHNICAL CONFERENCE OF NUCLEAR PHYSICS AND LINEAR ACCELERATORS, OCTOBER 10-17, 1961. PART III. STORAGE DEVICES.
Mono. Materialy Nauchno-Technicheskoi Konferentsii po Yadernoi Fizike i Lineinym Uskoritelyam, 10-14 Oktyabrya 1961 Goda. Chast' 3, Nakopitel'nye Ustroistva, Kharkov, 1962, 131p.

Balebanov, V. M., Volkov, B. I. and others
ON THE CONFINEMENT FF PARTICLES IN MAGNETIC FIELDS OF CYLINDRICAL SYSMMETRY. Preprint of paper presented at Conference on Mirror Configurations Fontenay-aux-Roses, Jul 63, form Kurchatov Inst. of Atomic Energy and Moscow U.
Mono. Dvizhenie Otdel'nykh Zaryazhennykh Chastits v Magnitnom Pole s Vintovoi Simmetriei, n.p., 1963, 26p.

Bielka, H. and Graffi, A.
[NO ENGLISH TITLE GIVEN] (Chemisches Verhalten und Resistenz der Virus der Myeloischen Leukamie).
Acta Biol[ogica et] Med]ica] Germanica (West Germany) 1962, v. 9, p, 383-410.

Brose, Manfred.
MEASUREMENT AND CALCULATION OF RESONANCE ABSORPTION IN GOLD, URANIUM AND THORIUM FOILS. Thesis, Karlsruhe U.
Mono. Zur Messung und Berechnung der Resonanzabsorption in Gold-, Uran-, und Thorium-, folien [Karlsruhe] 1962, 139p.

Fel'dbaum, A. A.
FUNDAMENTALS IN THE THEORY OF AUTOMATIC SYSTEMS.
Mono. Osnovy Teorii Optimal'nykh Avtomaticheskikh Sistem, Moscow, 1963, 450p.
To be published by API after winter 64.

Gorlenko, M. V.
SHORT COURSE ON PLANT RESISTENCE TO INFECTIOUS DISEASES.
Mono. Kratkii Kors Immuniteta Rastenii k Infektsionnym Bolezniyam, Moscow, 1962.

Grishina, K. F. and Komarova, L. A.
THE TECHNIQUE AND METHOD OF CONDUCTING PHYSIOTHERAPEUTIC PROCEDURES: SELECTIONS.
Mono. Tekhnika i Metodika Provedeniya Fizioterapevtecheskikh Protsedur, Leningrad, 1963, p. 101-106, 115-118, 126-134, 160-169, 176-182, 183-191, 192-202, 317-320.

Lohs, Karlheinz
INSTRUMENTS FOR THE DETECTION OF GASES, POISONS AND DUSTS: SELECTED PARTS.
Mono. Nachweisgerate für Giftige Gase, Dample, und Staube, Berlin, 1962, p. 5, 55, 75, 77-78, 92-93, 111-116, 125-131, 135-139, 144-145, 157-179, 180-189, 211-212.

Lomov, B. F.
MAN AND TECHNOLOGY.
Mono. Chelovek i Tekhnika, Leningrad, 1963, 266p.

Medovar, B. I. and Latash, Yu. V.
ELECTROSLAG REMELTING.
Mono. Elektroshlakovyi Pereplav, Moscow, 1963, p. 5-169.

Pakhomov, L. A. and others.
AEROLOGICAL RESEARCH ON THE VARIABILITY OF THE REFRACTION COEFFICIENT OF THE ATMOSPHERE FOR ULTRASHORT RADIO WAVES.
Mono. Aerologicheskii Issledovaniya Izmenchivosti Koeffitsienta Prelomleniya Atmosfery dlya Ul'trakorotkikh Radiovoln, Moscow, 1960, p. 3-59.

RRosenberg, L. D.
ULTRASONIC CUTTING.
Mono. Ul'trazvukvoe Rezanie, Moscow, 1962, 251p.
To be published by CB after Jul 64.

Sani, L., Tondinelli, L. and others.
THEORETICAL-EXPERIMENTAL EXPOSED TO A FAST NEUTRON SOURCE (Indagine Teorico-Sperimentale sui Contatori a Protoni di Rinculo Esposti ad una Sorgente de Neutroni Veloci).
[Comitato Nazionale per l'Energia Nucleare] (Italy) CNEN-158, Jan 62, 58p.

Vainstein, B. K.
X-RAY DIFFRACTION BY CHAIN MOLECULES.
Trans. in process of unidentified Russion mono.

Vinogradov, A. P., ed.
CHEMISTRY OF THE EARTH'S CRUST. Abstracts of reports delivered at the Geochemical Conference Devoted to the 100th Anniversary of the Birth of V. I. Vernadskii, 14-19 Mar 63.
Mono. Khimiya Zemnoi Kory, Moscow, 1963, 118p.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 10, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.